Supplemental Information for Migratory Birds and Bald and Golden Eagles that May Occur in a Project Action Area in IPaC

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MIGRATORY BIRDS
The Migratory Bird Treaty Act (MBTA) prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service. The incidental take of migratory birds is the injury or death of birds that results from, but is not the purpose, of an activity. The Service interprets the MBTA to prohibit incidental take.

Measures for Proactively Minimizing Migratory Bird Impacts
Your IPaC Migratory Bird list showcases birds of particular concern, including FWS Birds of Conservation Concern (BCC), in your project location. This is not a comprehensive list of all birds found in your project area. However, you can help proactively minimize significant impacts to all birds at your project location by implementing the measures in the "Nationwide Avoidance and Minimization Measures for Birds" document, and any other project-specific conservation measures suggested at the link "Measures for avoiding and minimizing impacts to birds" for the birds of concern on your list.

Ensure Your IPaC Migratory Bird List is Accurate and Complete
The vertical line on your PROBABILITY OF PRESENCE graphs indicates whether or not the project is in a well-surveyed area. See below for examples of a poorly surveyed area compared to a well-surveyed area.

Example of survey effort bars in a poorly surveyed area in IPaC (vertical survey effort bars are completely missing for some months and/or are very small):
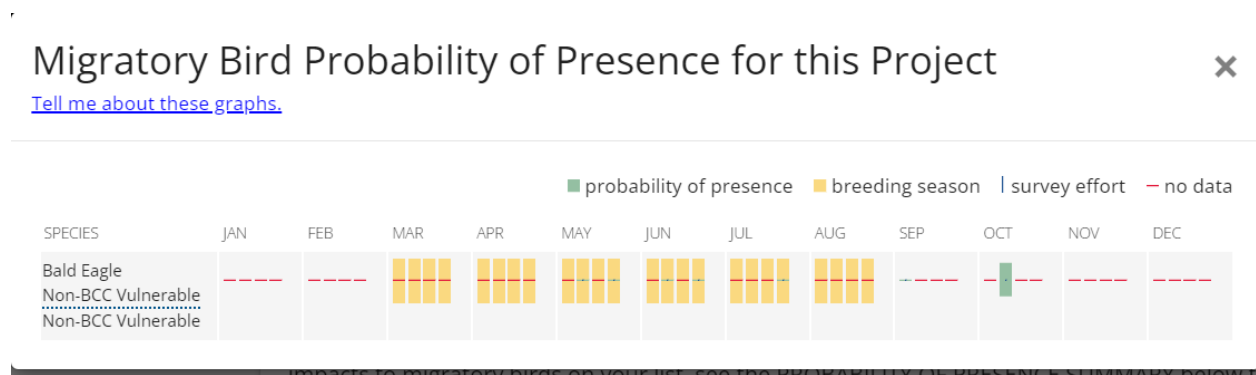
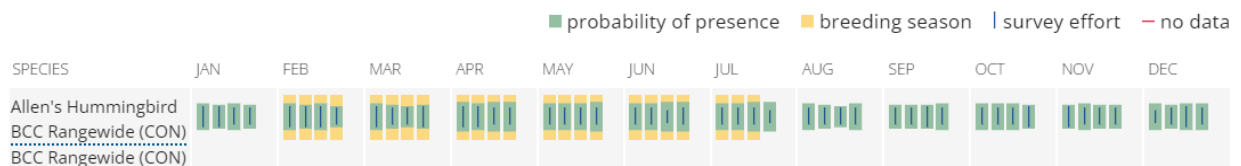*Example of survey effort bars in a well-surveyed area in IPaC (vertical survey efforts bars are represented for each month of the year and are large):*

If vertical survey effort lines indicate insufficient or no survey effort, or your report states there are no species of concern in your project area, your list may not be complete. You may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys).

**If vertical survey effort lines indicate sufficient survey effort,** these graphs provide:
- Timeframe data about when birds of concern are likely to be present.
- Breeding timeframes for species known to breed in the area are indicated with yellow bars on the graph.

You can use this information to schedule activities when birds are typically not known to occur in the project area to minimize bird impacts.

Steps to Take When No Results Are Returned

The data in some locations may trigger results which indicate that no migratory birds of concern have been observed in the area. This does not mean birds of concern are not present in your project area, especially if the area is difficult to survey. To assess the survey effort, draw your project area in the Rapid Avian Information Locator (RAIL) tool. If RAIL indicates no birds have been observed in your project area, your project is likely in an area with very little or no survey data. If RAIL indicates birds have been observed in your project area, the bird phenology graphs at the bottom of each profile can help you determine how well the area has been surveyed. If the vertical effort bars on the graph are very small or non-existent, this mean the area is not well-surveyed. In these cases, you may need to rely on other resources to determine what birds may be present (e.g. your local FWS field office, state surveys, your own surveys). See below for examples of a poorly surveyed area compared to a well-surveyed area.

Example of survey effort bars in a poorly surveyed area in RAIL (vertical survey effort bars are completely missing for some and/or are very small):
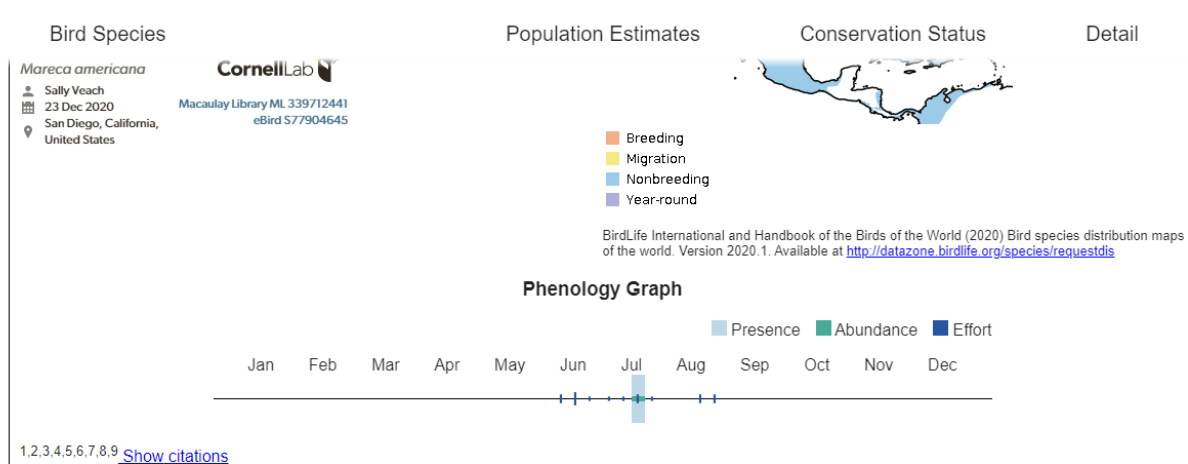
Example of survey effort bars in a well-surveyed area (in RAIL vertical survey efforts bars are represented for each month of the year and are large):
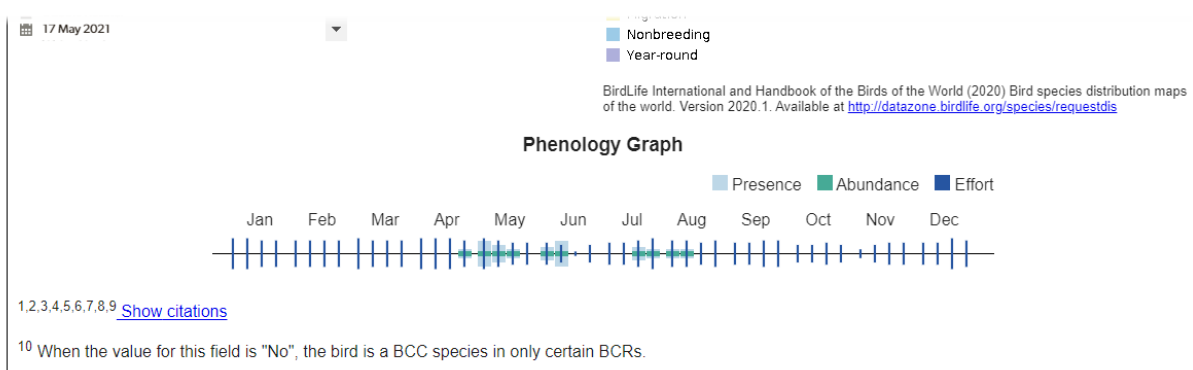
Review the FAQs
The FAQs below provide important additional information and resources.

Migratory Bird List FAQs

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.
Nationwide Avoidance & Minimization Measures for Birds describes measures that can help avoid and minimize impacts to all birds at any location year-round. When birds may be breeding in

the area, identifying the locations of any active nests and avoiding their destruction is a helpful measure to minimize impacts. To see when birds are most likely to occur and breed in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern (BCC)](#) and other species that may warrant special attention in your project location, such as those listed under the Endangered Species Act or the [Bald and Golden Eagle Protection Act](#) and those species marked as "Vulnerable". See the FAQ "**what are the levels of concern for migratory birds?"** For more information on the levels of concern covered in the IPaC migratory bird species list.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network (AKN)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) with which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Bald and Golden Eagle Protection Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator (RAIL) Tool](#).

Why are subspecies showing up on my list?

Subspecies profiles are being triggered because the subspecies is a BCC species in the area you have selected, and observations in the AKN for **the species** are being detected. If the species are present, that means that the subspecies may also be present, but this is not definitive in any way. If a subspecies shows up on your list, you may need to rely on other resources to determine if that subspecies may be present (e.g. your local FWS field office, state surveys, your own surveys).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network (AKN)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or year-round), you may query your location using the RAIL Tool and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Bald and Golden Eagle Protection Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially BCC species. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts, please see the "**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds**" FAQ above.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Proper interpretation and use of your migratory bird report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds".

Understanding the probability of presence graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data ()

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

BALD & GOLDEN EAGLES

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the various links on this page.

Measures for Proactively Minimizing Eagle Impacts

For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the National Bald Eagle Management Guidelines. You may employ the timing and activity-specific distance recommendations in this document when designing your project/activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to Bald Eagle Nesting and Sensitivity to Human Activity.

The Service does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

If disturbance or take of eagles cannot be avoided, an incidental take permit may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the Do I Need A Permit Tool. For assistance making this determination for golden eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.
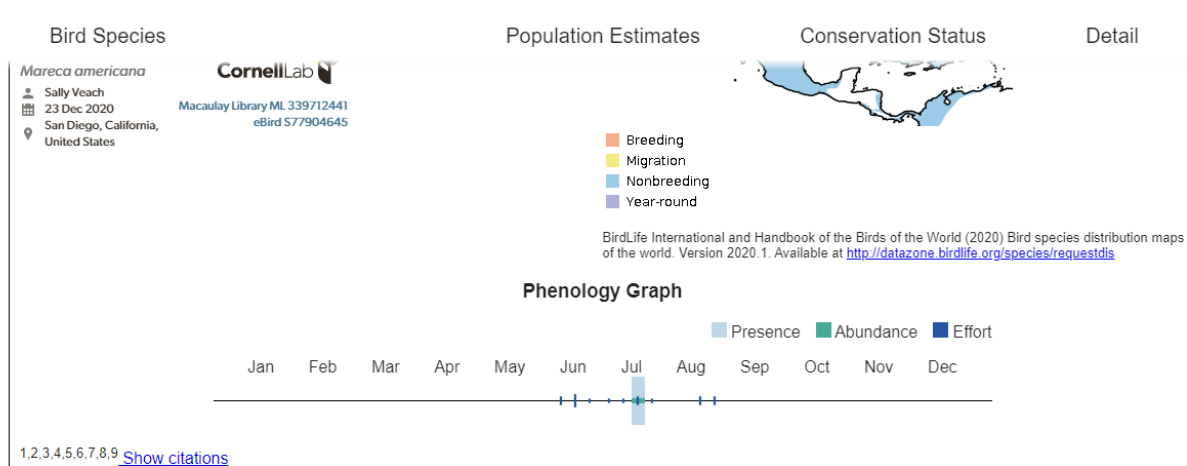
Ensure Your IPaC Eagle List is Accurate and Complete

If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local USFWS field office, state surveys, your own surveys). Please review the "Ensure Your IPaC Migratory Bird List is Accurate and Complete" section of this document.

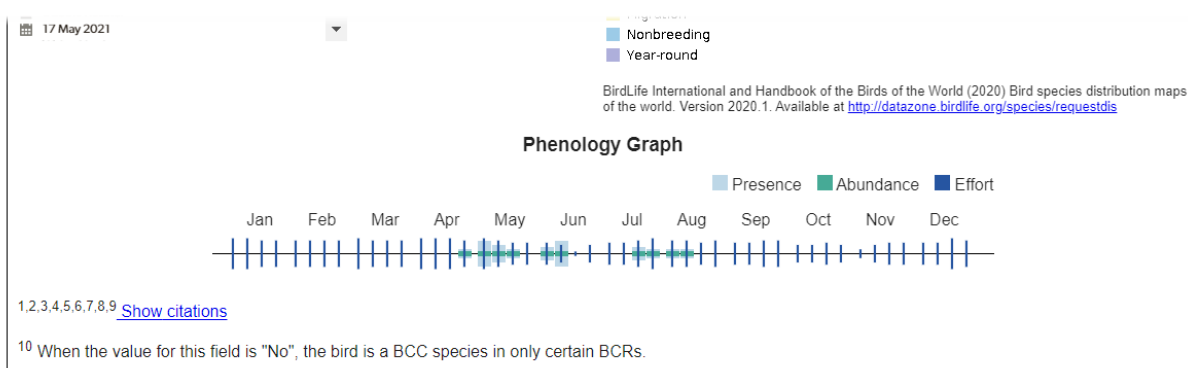**Steps to Take When No Results Are Returned**

The data in some locations may trigger results which indicate that no eagles have been observed in the area. This does not mean eagles are not present in your project area, especially if the area is difficult to survey. To assess the survey effort, draw your project area in the Rapid Avian Information Locator (RAIL) tool. If RAIL indicates no birds have been observed in your project area, your project is likely in an area with very little or no survey data. If RAIL indicates birds have been observed in your project area, the bird phenology graphs at the bottom of each profile can help you determine how well the area has been surveyed. If the vertical effort bars on the graph are very small or non-existent, this mean the area is not well-surveyed. In these cases, you may need to rely on other resources to determine what birds may be present (e.g. your local FWS field office, state surveys, your own surveys). See below for examples of a poorly surveyed area compared to a well-surveyed area.

Example of survey effort bars in a poorly surveyed area in RAIL (vertical survey effort bars are completely missing for some months and/or are very small):

Example of survey effort bars in a well-surveyed area in RAIL (vertical survey efforts bars are represented for each month of the year and are large):

Bald and Golden Eagle FAQs

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as

warranting special attention because they are a BCC species in that area, an eagle ([Bald and Golden Eagle Protection Act](#) requirements may apply)**.**

Proper interpretation and use of your eagle report
On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort line or no data line (red horizontal) means a lack of data and, therefore, a lack of certainty about presence of the species. If the bars are small or indicate no survey effort; or your report says there are no eagle species in your project area, your list may not be complete, and you may need to rely on other resources (e.g. federal and state eagle survey and eagle nest survey data) to determine the eagle species that are likely to occur, when and in what abundance they occur, and what they are doing (breeding, wintering, year-round) in your project area. This list is not perfect; it is simply a starting point for identifying what birds have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information helps you know what to look for to confirm presence and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities or get the appropriate [permits](#) should presence be confirmed.

Understanding the probability of presence graphs
Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:

The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.