Indiana Important Bird Area LandBird Monitoring Project

Instruction Booklet

Prepared by:
Ross Brittain, PhD
Indiana Director of Bird Conservation
National Audubon Society
Walker Plaza
719 Indiana Avenue, Room 300
Indianapolis, IN 46202

Introduction

The Important Bird Areas Program (IBA) is a global effort to identify and conserve areas that are vital to birds and other biodiversity. By working with Audubon chapters, landowners, public agencies, community groups, and other non-profits, Audubon endeavors to interest and activate a broad network of supporters to ensure that all Important Bird Areas are properly managed and conserved.

The Important Bird Areas Program recognizes that coupled with global warming, habitat loss and fragmentation are the most serious threats facing populations of birds across America and around the world. By working to identify and implement conservation strategies at Important Bird Areas, we hope to minimize the effects that habitat loss and degradation have on birds and other biodiversity.

Unless we can slow the pace of our changing climate and the rapid destruction and degradation of habitat, populations of many birds may decline to dangerously low levels. – The National Audubon Society

The National Audubon Society (NAS) implements the U.S. IBA program for Bird Life International and has recognized more than 2800 IBAs (Fig. 1). As of 2010, NAS has recognized 40 IBAs in Indiana totaling over 720,000 acres of habitat, 15 of which are considered globally important (Fig. 2).

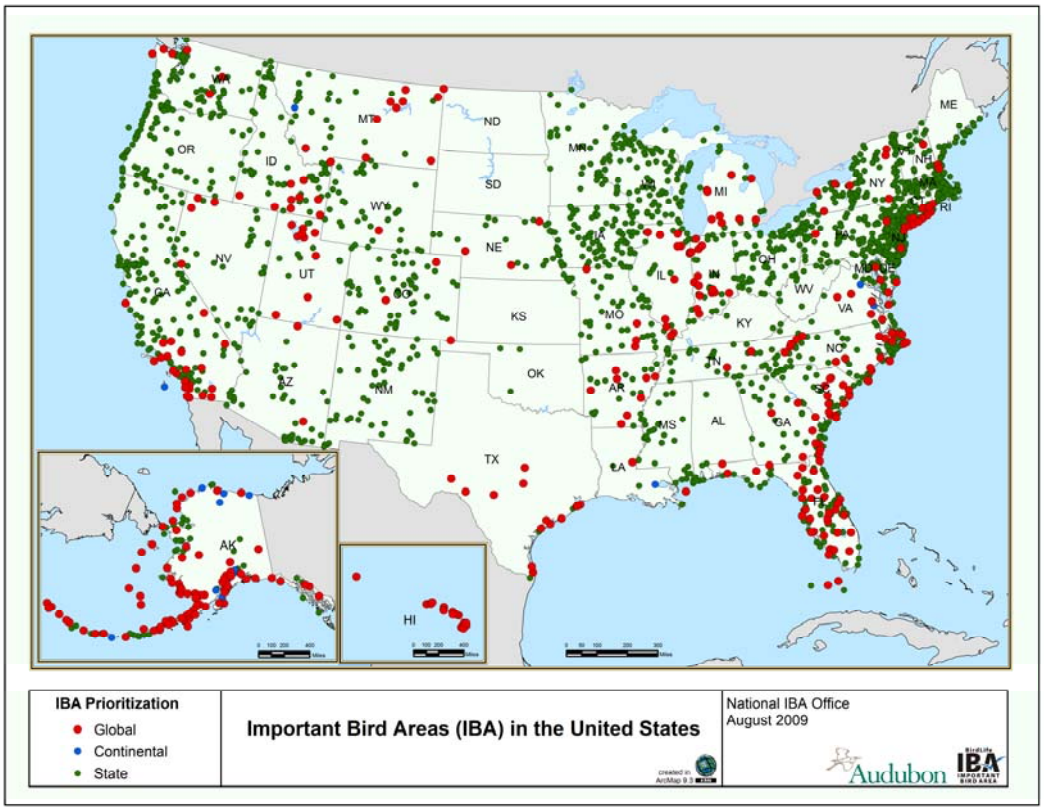

Figure 1. Map of recognized Important Bird Areas in the United States.

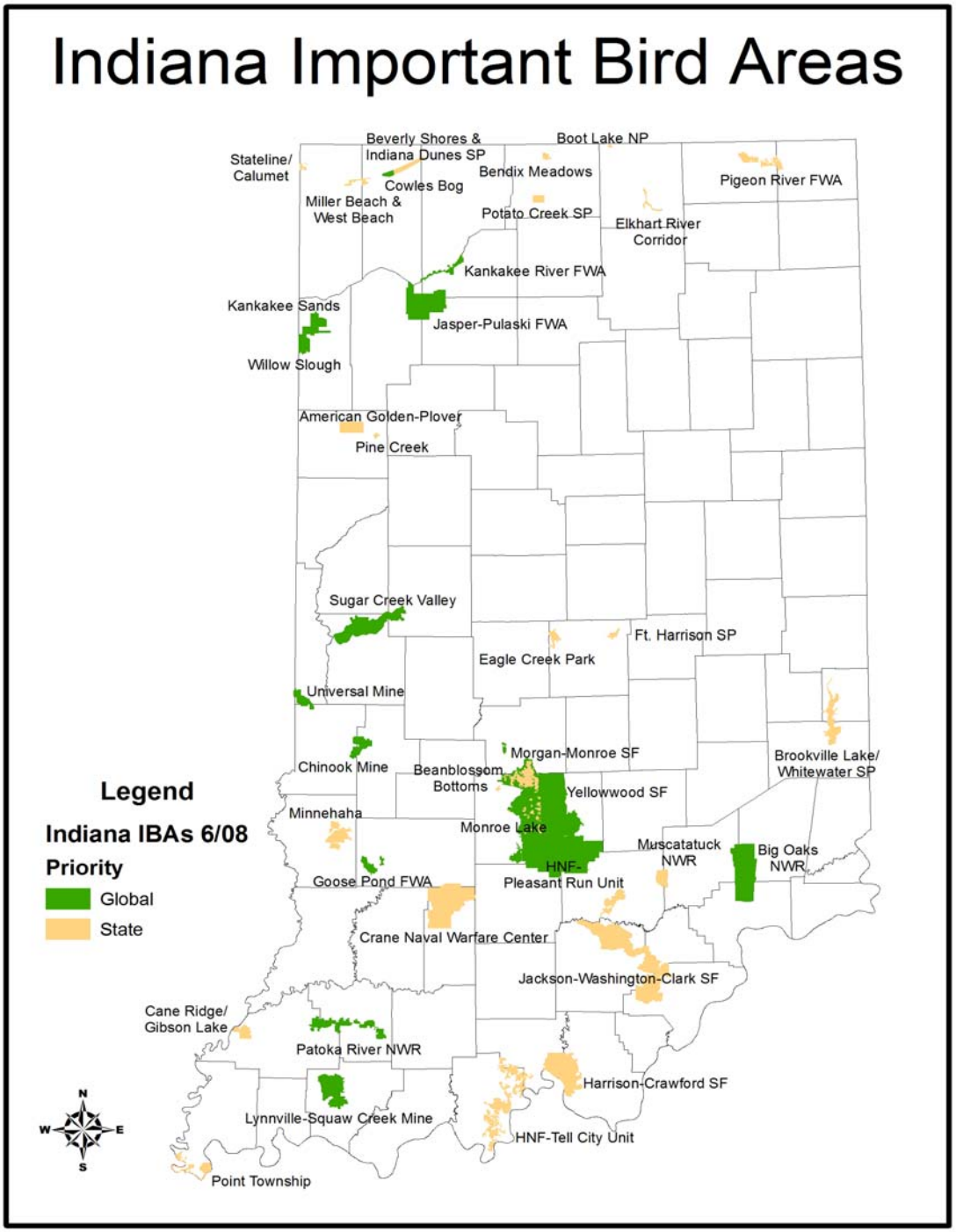

Figure 2. Map of Recognized Important Bird Areas in Indiana.

Goals

The primary objective of this project is to monitor land birds in IBAs across the Hoosier landscape using a standardized survey methodology carried out by teams of volunteers during migration, breeding season, and winter. This project should allow us to measure the following indices:

1. Identify land bird species present in the IBAs
2. Determine species' seasonal use of the IBA habitats (i.e., spring migration, breeding, fall migration, over-wintering)
3. Estimate relative abundances of various land bird species in the IBAs across time
4. In the long-term, monitor trends in land bird species in the IBA
5. Estimate population densities of various land bird species in the IBAs.
6. Correlate habitat characteristics to habitat use by various land bird species.

Protocol

This monitoring protocol was designed to be as standardized as possible in order to obtain data that can be analyzed locally and also made available to national databases. Collecting data using a standardized procedure is important for a variety of reasons. Controlling for and limiting certain biases in how data are collected can enhance the scientific credibility of a monitoring project. Using a well-defined protocol can also have quality control advantages that are key to data analysis. Perhaps most importantly, a clearly defined monitoring protocol can improve long-term monitoring studies by providing a clear system that has stability and continuity for end-users of the data and the people collecting it.

Many of the aspects of this protocol were adopted from the Twin Cities Mississippi River IBA Monitoring Project developed by Tania Homayoun as a pilot method to be used on IBAs across the country (http://mn.audubon.org/birds-science-education/important-bird-areas/ibas-volunteer). However, some parts of the protocol have been adapted to include a longer time period (10-min) for counting to increase the probability of detecting rare species and to allow for more accurate density estimates by grouping detected birds into 10-m distance intervals.

Bird Survey Methods

Pre-Survey Preparation

Re-familiarize yourself with birds that commonly migrate through and breed in the region of study. Indiana has three Bird Conservation Regions (BCR) that bisect the state (Fig. 3). Know the birds that are common within the BCR you will be monitoring. Practice estimating 10-m intervals up to 50-meter distances for the fixed radius point counts.

Scouting

In most cases, survey points in each site have been visited to verify their location and accessibility and their GPS coordinates recorded. However, it is recommended that each surveyor/team visit their site before data collection begins to find parking, locate each point, and identify an optimal route around the site that minimizes travel time.

Site Access

In the event that a point becomes inaccessible, please re-locate a new point as close as possible to the original point. Note the new location on the site map and record the point ID number, GPS coordinates, and any other details about the new location on the map and data sheets. Notify the Indiana Director of Bird Conservation about these changes in point location.

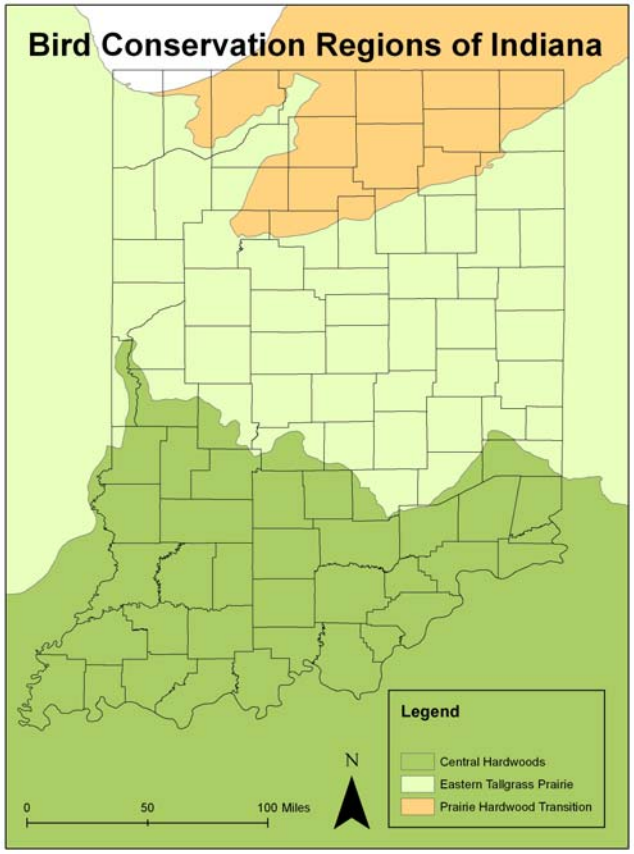

Figure 3. Bird Conservation Regions in Indiana.

Equipment Checklist

Equipment to be provided by Audubon:

- Site maps with points marked
- Datasheets
- Clipboard

Equipment to be provided by volunteers:

- Binoculars
- Pencils or fine-point Sharpie® marker (won't bleed in the rain)
- Watch or timer
- Your favorite field guide
- Water, sunscreen, snacks, etc.
- If desired, a buddy, fellow birder, or helpful hand

When to Survey Sites

Dates

Point counts will be performed 6 times (once per week) during spring migration (early-April to mid-May) and at least 2 times (separated by at least 10 days) during the breeding season (late-May to mid-June). The sample points should also be revisited for point counts to be performed 6 times (once per week)

during fall migration (mid-September to late-October) and at least 2 times (separated by at least 10 days) during the over-winter time period (mid-December to early-February). While it is not necessary to conduct the surveys during all four time periods (spring migration, breeding, fall migration and overwinter), it is necessary that the minimum number of visits be accomplished for each time period in order for the data to be valid.

Time of Day
Begin sampling at your first point as close to sunrise as possible (as early as 30-min before sunrise). Point counts should not continue beyond 4.5 hours after sunrise. If all points in the site cannot be completed in this time frame, finish the remaining points another morning and make note of this on the datasheet with a brief explanation (ex. "Started raining before points A, B, and C were surveyed"). It is important that each site's surveys be completed within as short a time as possible.

Weather
Occasional short rain showers or bouts of light drizzle are acceptable, but point counts should not be conducted in fog, steady rain or drizzle. Likewise, avoid counting in conditions where the wind exceeds 12-15 mph (enough breeze to raise dust and loose paper and move small tree branches).

Counting Birds

Survey Route
In order to avoid a "time of day" effect, alternate starting points for the route. For example, if you are working through points on a loop, walk clockwise one day and counter-clockwise through the points the next visit.

50 meter Fixed-Radius Point Count Methodology (10 minute duration)
1. Navigate to each point using a hand-held GPS unit or following detailed instructions using a map and compass.
2. While working in teams is encouraged, there should be only one primary observer per site. Having another team member recording the data (as dictated by the observer) is very helpful and can allow the observer to focus solely on identifying birds.
3. Wait for about a minute before beginning the 10-minute count period. This allows the observer to catch their breath, get oriented, record site conditions, prepare the data sheets and for birds to adjust to their presence. Try to identify landmarks that are at 10-m intervals from you out to 50 meters.
4. What to Count?
    - Count all land birds seen or heard during a 10-minute period. Do not count waterfowl, wading birds, or other water/shore birds
    - Count all birds that flushed from the habitat upon the observer's approach to the point.
    - Count birds that enter (and remain in) the habitat during the 10-minute period.
    - Do not count flyovers (birds merely passing through).
    - Count birds that are foraging aerially (flycatchers, etc.)
5. On the datasheet, identify birds using their 4 letter AOU Alpha Codes. If unsure of the identity of a bird, make notes on back of the data sheet with comments describing its song, appearance, and where you saw it—it is ok to go back and verify a suspected ID later if you feel confident you can. If you can partially identify the bird, identify it as specifically as you can. (ex. "unknown sparrow"). Otherwise, note it as UNKN. The Alpha Codes are available at: http://www.birdpop.org/AlphaCodes.htm.
6. Denote birds seen or heard within 10-m intervals out to 50 meters from the sample point. Those heard outside the 50-meter band are grouped together. Record these distances as the horizontal distance from the observer to the bird.
7. Denote birds seen or heard within the first 5 minute and the second 5 minute time periods.
8. Don't use any method of attracting or coaxing birds into view (i.e. no "pishing").

Temporary Noise or Interruptions
If a temporary noise (airplane overhead) or interruption (curious park patron) disrupts your count at a given point, pause the clock until the interruption has passed and then resume counting for the remainder of the period. The total count time for birds at every point (not including interruptions) should be 10 minutes.

Filling Out the Data Form

Complete a new data sheet for each visit to the site. On particularly busy mornings, more than one sheet may be needed. If no birds are observed at a given point, fill out the point information and note "No Birds Observed" on the data sheet.

Field Descriptions on Forms
- **Site**: Name of the park or area being surveyed
- **Date**: Use mm/dd/yyyy format
- **Site Start Time**: Start time of first point count on the site. Use hh:mm format.
- **Site Stop Time**: End time of last point count on the site. Use hh:mm format.
- **Temperature**: Record the temperature in degrees (either Fahrenheit or Celsius) for the time at which the first point count was started and again at the end of the day's survey. You may need to fill these out after the day's surveying using www.weather.gov or another weather forecasting site.
- For **Sky** and **Wind** entries, use the condition descriptions (provided on data sheets) to assign codes to the site at the start of the first point count and end of the last count. If conditions differ substantially at subsequent points, make note of this in the Comments column of the data sheet.
- **Observer**: Person actually searching for and identifying birds
- **Recorder**: May be same as observer or another team member
- **Point ID**: The full letter and number code for the sampling point
- **Noise Code**: Use the Background Noise descriptions to assign a noise rating to each point prior to the point count
- **Time**: Record the start time for each point count
- **Species Code**: Use the 4 letter AOU Alpha Code for the species seen. If you are unsure of the correct code while in the field, write down an abbreviation you will recognize and enter the correct Alpha code later in the Comments section. Alpha Codes are available at: http://www.birdpop.org/AlphaCodes.htm.
- **Tally**: Use this space to tally up the number of birds seen during 10 min count
- **Total**: Verify the tally using a numeral
- **Comments**: Any observations of note for birds, sample point conditions, or interruptions

Submitting Data

Please submit your data within 1 week of each survey date. Please mail your completed count data and site information forms to:

Dr. Ross Brittain
Indiana Director of Bird Conservation
National Audubon Society
Walker Plaza
719 Indiana Ave., Rm 300
Indianapolis, IN 46202

If you have questions please email Dr. Brittain at:
Email: rbrittain@audubon.org
Phone: 317-278-8290

Appendix A: Designing the Protocol

Like many land bird surveys, this protocol utilizes a 10-minute, 50-meter radius point count methodology. The longer an observer stands at a point, the more species they are likely to hear; however, the longer you remain at a point, the more likely you are to overcount/double count the same birds. A 10-minute period is a frequently used time interval that allows for good detection. The 50-meter radius is another commonly used convention in many point counts. In this survey, observers will be asked to categorize birds as seen within 10 meters, 10-20 meters, 20-30 meters, 30-40 meters, 40-50 meters and "beyond 50 meters" of the observer. When dealing with many Passerine species, detection beyond 50 meters can be difficult. Using the multiple intervals will allow NAS to make more accurate estimates of species densities (number of birds per unit area) in the habitat by correcting for species' decreasing detectability with distance from the observer and by correcting for the increasing area actually observed with distance from the observer.

Similarly, many point counts use a 5-minute sample period. Thus, the observers will be asked to categorize the bird detections as either "within 5 minutes" or "greater than 5 minutes." This time categorization will allow NAS to compare the data between different studies.

Sample points are separated by at least 250 meters (to minimize the risk of double-counting birds at two different points).