

A collaborative web-based recording program to summarize records of migratory birds during non-breeding periods in Central and South America.

Un programa cooperativo basado en el internet para condensar los registros de aves migratorias durante los periodos de no reproducción Centro y Sud América.

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This talk will focus on a new internet application that is being developed through a collaboration between CLO, USFWS, and Latin American partners who are working together to try to increase our knowledge about a group of migratory species from North America that are spending their winter here in South America and for which we have a critical need to generate effective range-wide conservation strategies.

Requerimientos para una Estrategia de Conservación Exitosa

- Amenazas a través del ciclo de vida.
- Un conocimiento detallado de la distribución de las aves a lo largo de América.
- Determinar donde ocurren los factores limitantes.



For conservation strategies to be successful, you must:

- Identify threats that occur throughout the life cycle of the birds of interest
- You must have detailed knowledge of bird distributions throughout the breeding and wintering grounds
- You must also determine where the limiting factors are occurring

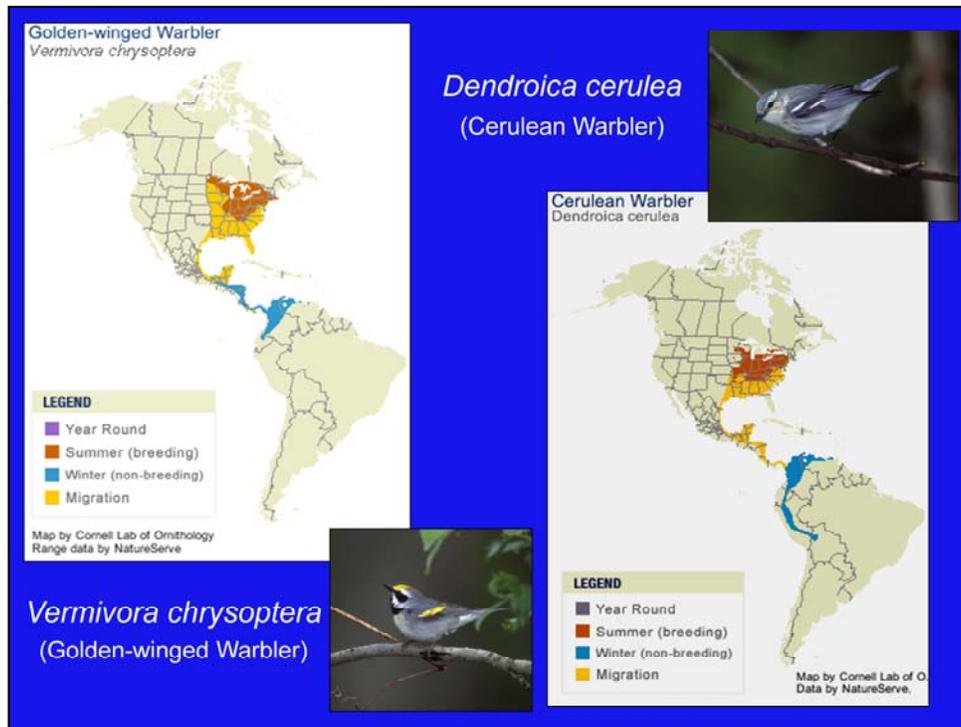
Yet today our knowledge of many migratory species outside their breeding grounds is extremely limited due to fewer field studies and the difficulty of sharing data, as the task of bringing together disparate and often unpublished information on field observations and species collections has been daunting. There are several groups currently involved in efforts to solve this problem and hope that what I'm presenting today will be viewed as a contribution to these efforts.

Avances Recientes en Sistemas Tecnológicos

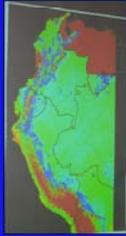
- Mejor manejo de la información vía Internet.
- Se puede organizar rápida y fácilmente, archivos y mostrar grandes series de datos.
- La información es accesible a una amplia audiencia.
- Desarrollo de nuevas formas para presentar y explorar información en línea en tiempo-real a través de interfaces de selección múltiple, como AverAves.



The difficulty in amassing this data has created a need for new tools to help facilitate the collection of information in remote locations. The Internet has played an important role in furthering science education and research by increasing capacity to better manage information, more quickly and easily organize, archive, and display large datasets, as well as make this information more accessible to a wider audience. New Internet programs like eBird, where birders can record and archive all their bird observations, maximize the utility and accessibility of vast numbers of records. However the real advantage is the ability to use the eBird application to build specific programs to gather information throughout the Americas that address conservation questions.



Here are examples of two Neotropical migrants that have received a lot of conservation attention lately. Threats and limiting factors most frequently mentioned are destruction of both breeding and wintering habitat and both are known to be declining precipitously in the majority of their ranges. Very little is known of their distribution and habitat needs during winter or migration seasons. Separate conservation initiatives have formed with groups of experts studying these species and working together to develop management plans that address the declines.



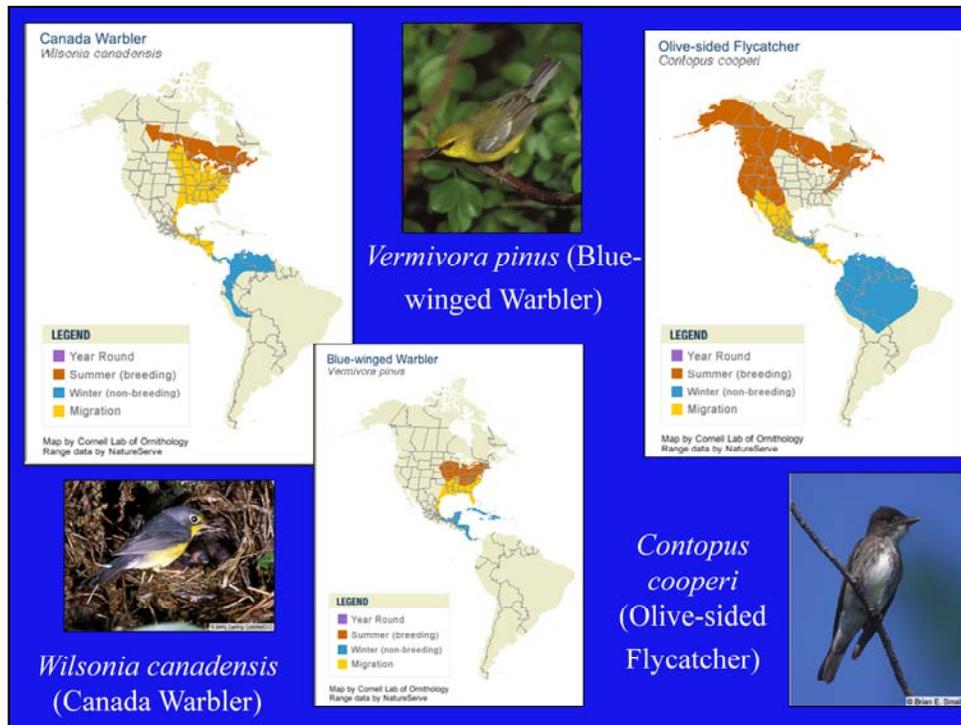
Grupos de Trabajo de Especies Prioritarias

El Grupo Ceruleo/Alianza Alas Doradas

- Taller Reinita Alidorada en Wisconsin –August, 2005
- Taller Reinita Cerúlea en Ecuador – November, 2005
- Tema de acción: desarrollo de un nuevo programa de monitoreo de migración y áreas de invierno para especies de alta prioridad.
- CLO desarrollo de una nueva interfaz para las especies prioritarias.



In 2005, two working groups were created from these initiatives to address conservation questions concerning the wintering ground needs for the two high profile migrants shown on the last slide. These groups, Alianza Alas Doradas and El Grupo Ceruleo, first met in Wisconsin and Ecuador. We had representatives from 8 countries, including organizations such as Birdlife International, ProAves, Humboldt, ABC, Nature Conservancy, and US Fish and Wildlife. An important action item emerged to develop a new program using existing web-based applications to fill gaps in our knowledge of these species' distribution during migration and winter, to maximize the number of people providing data in a central location, and to minimize the effort needed to contribute these records.



As we began to develop this new program we didn't want to limit it to just 2 birds, so we choose 3 additional species that are high priority neotropical migrants with winter ranges largely in South America. The wintering ranges and migration routes of these birds are also very poorly known. The cerulean is currently on the FWS Focal Species list of the 9 highest priority species to be targeted for conservation. All 5 birds are considered watch-list species according to the PIF landbird conservation plan as well as the FWS's Birds of Conservation Concern, and the Neotropical Migratory Bird Act lists. We need to develop detailed conservation plans for this group, yet our gaps in knowledge hamper this process. What we do know is often scattered in individual data bases or people's notebooks. We need to compile this information in one central location so it's assessable for everyone's use.

AverAves Migratorias Prioritarias

Objetivos del Proyecto:

- Colectar información sobre la distribución de las áreas no reproductivas.
- Compilar datos de localidades para sitios de parada de migración y las áreas no reproductivas.
- Generar datos para estrategias de conservación de amplio rango.
- Desarrollar alianzas a través de las Américas.



What we came up with is a new Internet-based application called Priority Migrant eBird which uses the eBird functionality to facilitate data entry and to produce data output products that will track the dynamic distributions of these high priority species. This technology can be managed by specific outside user groups to answer questions on both a regional and local level. (refer to E's talk about AverAves-if you're not familiar with eBird and want to learn more about the general functions go to E's talk)

The goals of this project are:

1. to collect distribution and abundance data for targeted species.
2. We're particularly interested in identifying important stopovers or areas of concentration to help feed existing models.
3. This information can be used to generate conservation strategies throughout their respective ranges.
4. It's also part of our continuing effort to create partnerships. We hope by initiating these programs that we can help organizations throughout the Americas to develop and use these tools for their own conservation needs. The Cornell Lab is responsible for part of this effort, but it's really a working partnership amongst many different user groups.

AverAves Migratorias Prioritarias

- Proyecto en español e inglés.
- Cornell coordina el esfuerzo de reclutamiento, desarrollo de la base de datos, creación del sitio Web.
- Posesión y reclutamiento de aliados en países Latinoamericanos.
- Financiado por USFWS.

The screenshot shows the Spanish version of the Priority Migrant eBird website. At the top, it says "Bienvenidos a Priority Migrant eBird" and "¡Donde tus observaciones hacen la diferencia!". Below this, there is a "Registrar como nuevo usuario" button. The main content area is titled "Noticias sobre observación de aves" and includes several sections: "Introduciendo a las Aves Migratorias Prioritarias" with a link, "AverAves Migratorias Prioritarias" which describes the project's goal to collect data on five species of migratory birds, and "NUEVO! Registro de Hábitat y Elevación" which explains how to use a map to record location and elevation. There are also images of birds and a person walking on a path. Logos for US Fish & Wildlife Service, Cornell University, and NSF are visible on the right side.

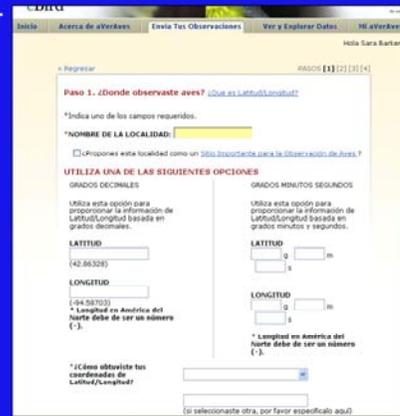
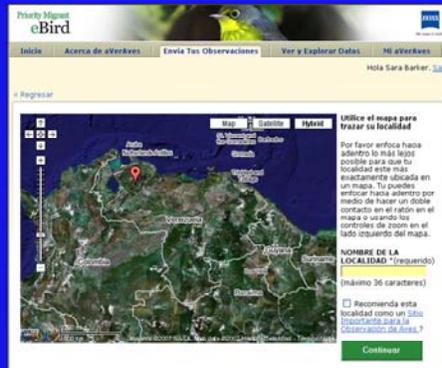
-The project is supported in both English and Spanish as an effort to bridge the gap between wintering and breeding ground research. Currently AverAves through CONABIO is graciously hosting our Spanish version of the program.

-Project coordination, recruitment, database and website development, and communication with our partners is jointly managed between Cornell's Conservation and Information Science departments. We hope to continue to build ownership and more recruitment from partners in Latin America.

-Current funding is provided by FWS.

AverAves Migratorias Prioritarias: Entrada de datos

- 1) Usuarios crean una cuenta en línea con una clave que protege el sitio vía Internet.
- 2) Ingresar localidades georreferenciadas con datos de latitud o longitud o a través de Google Maps.



-To submit records a user creates an online account that enables them to enter data via a password protected site on any computer connected to the Internet.

-Next the user will create a georeferenced location for each observation by entering a latitude and longitude or selecting a point on a map in Latin America which will be automatically downloaded into the database. For previously existing datasets that have georeferenced localities, they can be uploaded into the Priority Migrant database. In the case of the CERW this georeferenced data will be used to validate habitat sustainability models generated by El Grupo Ceruleo.

AverAves Migratorias Prioritarias: Entrada de datos

3) Ingresar localidad y datos de esfuerzo de cada observación:

- Observaciones casuales
- Conteos fijos
- Conteos itinerantes
- Conteos de area exhaustivos
- Estaciones de anillamiento

The screenshot shows the 'Paso 2. Fecha, Esfuerzo y Hábitat.' section of the eBird data entry form. It includes several input fields and radio buttons for selecting observation types: 'Observación casual', 'Conteo por puntos', 'Conteo por transecto', 'Conteo intensivo de área', and 'Estación de anillamiento'. Below these are fields for 'FECHA DE OBSERVACIÓN' (date), 'HORA DE INICIO' (start time), 'DURACIÓN' (duration), 'DISTANCIA RECORRIDA' (distance), 'ÁREA CUBIERTA' (area covered), and 'ELEVACIÓN' (elevation). There is also a dropdown for 'PRINCIPAL TIPO DE HABITAT' and a field for 'NÚMERO DE PERSONAS QUE SALIERON A OBSERVAR AVES'.

4) Listas de chequeo de especies

- Diseñado únicamente para el proyecto de 5 especies.
- Participantes tendrán la opción de ingresar datos para todas las especies a través de la interfaz regular de AverAves.

The screenshot shows the '¿QUÉ OBSERVASTE/BOUGHISTE?' checklist form. It includes a field for 'Nombre de la Localidad' and a section for 'Mostrar las especies' with a 'Mostrar' button. Below this is a list of species names with checkboxes for recording sightings. The list includes 'Mangrova', 'pajonales', 'bosque', 'bosque tropical húmedo', 'bosque seco', 'sabana húmeda', 'sabana seca', 'chapas de colina', and 'matorral'. There are also checkboxes for '¿Se registró el número de individuos de esta especie observada?' and '¿Se registró el número de individuos de esta especie observada?'. The form ends with a 'Continuar' button.

-Then a user will enter location and effort data about their observation, choosing one of five basic field protocols; casual sighting, stationary count, traveling count, exhaustive area count, and banding station; each requiring a different level of effort and area searched.

-Next a simple checklist will appear enabling the user to record the number of priority species detected. The checklist is designed solely for this project where participants will only see the 5 study species, rather than hundreds of birds for say Ecuador or Venezuela. However, in the near future participants will have the option of entering data for all species through regular eBird throughout the western hemisphere.

AverAves Migratorias Prioritarias: Nuevas Características de Datos

- Listas de selección para hábitats.
- Información de edad y sexo.
- Protocolos específicos para el proyecto.

The screenshot displays the eBird web application interface. The top navigation bar includes 'Inicio', 'Acerca de averAves', 'Envía Tus Observaciones', and 'Ver y Explorar Datos'. The user is logged in as 'Hola Sara Barker'. The main content area is titled 'Paso 3a: Edad y sexo de las especies identificadas' and includes a sub-header 'Ingresar números por edad y sexo de las especies identificadas.' Below this, there are two data entry sections. The first section is for 'chipe ala dorada' (numbered 2) and the second is for 'chipe cerúleo' (numbered 1). Each section contains a table for recording age and sex. The 'chipe ala dorada' table has columns for 'SEXO' (Hembra, Macho, Desconocido) and 'EDAD' (Juvenil, Inmaduro, Adulto, Desconocido). The 'chipe cerúleo' table has the same structure. A 'Comentarios:' field is provided for each entry. On the left side of the screenshot, a sidebar menu is visible with categories like 'TIPO DE OBSERVACION', 'FECHA DE OBSERVACION', 'HORA DE INICIO', 'DURACION', and 'PRINCIPAL TIPO DE HABITAT:'. The 'PRINCIPAL TIPO DE HABITAT:' section is expanded, showing a list of habitat options such as 'Bosque tropical y subtropical húmero/húmedo', 'Bosque tropical caducifolio y semicaducifolio', etc.

-4 new features were developed that are different from the regular eBird application.

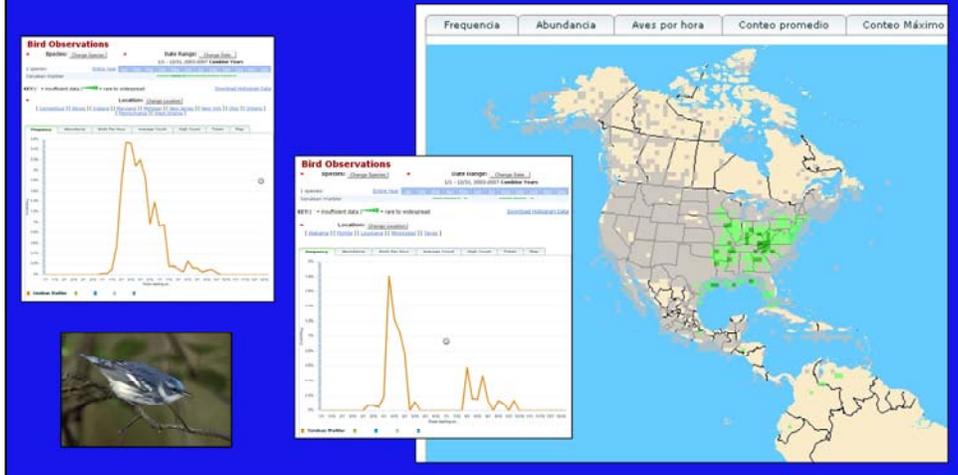
-The first is a set of two pull down habitat menus. The first menu is major habitat type based on World Wildlife Fund's biomes and ecoregions. The second pull down menu called Ecological Modifier describes successional and disturbance history often as a result of human activity. These serve to modify the major habitat types.

-The second new feature is the ability to record the age and sex of individual birds seen. This is important as for many species we know that males and females may segregate on the wintering grounds.

-The third feature is the ability to add specific protocols to the list of standard eBird protocols on the data entry page. Data collected using specific protocols can be flagged in the database and pulled out for separate analysis. For example if a group develops a specific technique for surveying Canada Warblers in South America it can be added to this application.

AverAves Migratorias Prioritarias: Salida de Datos

- Mapas en tiempo real – mostrando rutas de migración.
- Gráficos – frecuencia y abundancia.
- Capacidad de recuperación de datos perdidos.



-This is an example of data output from eBird and Priority Migrant eBird showing what we have so far for CERW. Currently most of the data in the database is from the US and Canada. It's a good depiction of the breeding grounds and also the migration stopover concentration sites along the gulf coast of the US. eBird can produce graphs of frequency and abundance. The one on left is a frequency graph of the northern breeding grounds showing a sharp seasonal peak through mid-May that trails off in the summer months. But if we just look at the concentration areas along the gulf coast the frequency graph on the right shows the peaks of migration for CERW in mid-April and a smaller peak in August for Fall migration.

-If you look closely at the map you can see some green dots in South America as we're just beginning to get wintering ground data into the database and our hope is that within a few years we'll be able to accurately delineate the wintering grounds as well as be able to generate frequency graphs for each country where these birds winter.

-In addition to these outputs that are automatically generated, we will always have the capability of downloading and retrieving all of the actual data for use in analyses and modeling.

Usos Específicos para la Interfaz AverAves Migratorias Prioritarias

- Seguimiento de la migración de las especies prioritarias.
- Base de datos centralizada con salidas en tiempos real.
- Ayudar a identificar áreas estratégicas para futuros estudios.
- Identificar áreas prioritarias para acciones de conservación y protección en Latinoamérica.
- Fácilmente aplicado para comunidades de especies residentes en Latinoamérica.
- Puede generar vinculaciones locales y de propietarios, fortalecimiento de capacidades para acciones de conservación futuras.



In summary --

-This is a new application designed to track the migration routes of priority species in one centralized database with real time outputs that is easy to use and accessible by the Internet. **The information is also publicly available, meaning any person can have access to the information.**

-It will help researchers throughout the Americas target specific areas for further studies and focused research.

-It serves to help identify the most important areas in Latin America for conservation action, management, and future protection.

-As part of eBird we have the flexibility to adapt this application to a different suite of species such as resident species in Latin America that comprise communities of great conservation concern.

-It can also build the capacity for future research by generating local involvement and ownership of their data.

Visión para el Futuro

Nosotros esperamos que nuestros colegas pudieran usar esto y futuras interfaces de AverAves para realizar seguimiento a todas las aves migratorias y residentes a través del hemisferio occidental.

aVerAves



nabci

aVerAves
Hispaniola



Puerto Rico
eBird



We've just started this program and are very excited about it. We see this priority migrant eBird application as just the beginning of a larger vision to expand eBird throughout the western hemisphere. We expect the real value of these applications to increase as more people go into the field and as more bird tour leaders and the growing number of researchers throughout South America begin to use this application. The collective knowledge from all these people will be available in a single, permanently archived database available for everyone's use.

AverAves Migratorias Prioritarias

Nosotros te invitamos a todos a enviar sus observaciones!

<http://www.ebird.org/primig>



We invite you all to visit the Priority Migrant eBird website and submit your observations. We're interested in both new data and historical records. Please spread the word far and wide and encourage your colleagues in Latin America to participate and enter their data!