Legacy Workshops
on
Global Seabird Web Portals, Indices, Databases

One of the main objectives of the WSC is to hold discussions on establishing, facilitating and/or improving access to, and use of, information and data on seabirds which would benefit from interaction and integration at regional and/or global scales.

This circular, from the WSC Database Committee and the Convenors of WSC Legacy Workshops, is to give you some details about the WSC Workshops that will discuss such topics and to encourage you to attend one or more of these Workshops. If you are unable to do so, then we hope you will be able to come to the final WSC Legacy Plenary session on Saturday, when there will be brief presentations on the outcomes of all Legacy Workshops.

There will be series of Workshops (Wednesday to Friday), preceded by an introductory presentation and discussion of a web portal mechanism that might facilitate general information exchange amongst seabird researchers and organisations.

What follows is a table of all the Legacy Workshops, abstracts of the workshops and a Draft Agenda for the final plenary session where the outcomes of the workshops will be discussed.

List of Legacy Workshops

Code	Workshop Title	Duration	Convenor(s)
Wednesday			
L1a	Introduction to the aims of the Legacy Workshops	10 mins	Irons & Croxall
L1b	Seabird web portal: Seabirds.net	30 mins	Hatch
L1c	Introduction to linking seabird databases	10 mins	Bochenek
L1d	Distributed vs centralized databases: decision points	10 mins	Hatch
L2	World Seabird Colony Register (WSCR)	2 hours	Lascelles, Irons, Waugh & Hatch
L3	Tracking marine ecosystem response through seabird mortality events	2 hours	Parrish & Nevins
Thursday			
L4	World Seabird Governing Committee	1 hour	Croxall, Jodice, Camphuysen & Irons
L5	World Seabird Monitoring Database (WSMD)	2 hours	Hatch & Mitchell
L6	Seabird tracking databases	2 hours	Shaffer, Harrison, Small & Taylor
L7	Seabird-at-sea survey databases	2 hours	Webb & Kuletz
L8	Seabird Population and Productivity Indices	1 hour	Zockler, Irons, Gill & Bochenek
Friday			
L9	Tracking and at-sea survey database intercommunication	2 hours	Webb, Shaffer, Kuletz, Harrison, Small & Taylor
Saturday			
CP	WSC Legacy Plenary and Closing Remarks	2 hours	Irons & Croxall

Wednesday, September 8th

L1a. Introduction to the Aims of the Global Seabird Legacy Workshops

Convenors: David Irons (US Fish & Wildlife Service, david_irons@fws.gov)
               John Croxall (BirdLife International, john.croxall@birdlife.org)

Abstract:
A main objective of the WSC is to generate better communication and collaboration between seabird researchers and organisations worldwide. We hope to do this by: a) facilitating improved interaction between existing seabird groups by establishing a formal coalition of relevant bodies and a web-based communication system, and b) establishing better opportunities and systems for assembling and linking appropriate data on seabirds. This series of workshops has been organised to discuss these objectives and the best ways of addressing them. This recognises that many aspects of effective research and conservation of seabirds would be greatly enhanced by the ability to link and analyze data at regional and global scales. It is also important to enhance input of seabird data to current initiatives such as ocean health, climate change and marine biodiversity, which will require improved coordination of existing data and more effective links to data and databases on marine systems generally. In these workshops, we will review topics such as seabird monitoring (including colony registers), seabirds as indicators, at-sea distribution of seabirds, and mechanisms to enhance collaboration and cooperation among scientists and seabird groups.

L1b. Seabird Web Portal: seabirds.net

Convenopr: Scott Hatch (US Geological Survey, shatch@usgs.gov)

Abstract:
Seabird information sharing, including but not limited to globally comprehensive seabird databases, will be greatly facilitated by a general perception (which does not now exist) that the community of seabird professionals worldwide has a common, jointly-managed, non-proprietary, and organizationally neutral "home" on the Internet to serve as a gateway to seabird information—anything and everything on the web pertaining to seabirds. The domain name 'Seabirds.net' was acquired by the Pacific Seabird Group in 2008 to serve as the simplest, most generic, and most appropriate label for such an enterprise. The intent is to transfer ownership of the domain name to a world seabird governing body, which will host and manage the domain on behalf of all seabird societies, interest groups, and professionals. The purpose of the workshop is to introduce and discuss the concept of 'Seabirds.net,' to solicit ideas on how the domain should be managed, and to brainstorm ideas for useful content. Products will include a consensus model for initial content of the domain and creation of an international working group charged with implementation and oversight of 'Seabirds.net.'

L1c. Introduction to Linking Seabird Databases

Convener: Rob Bochenek (Axiom Consulting, rob@axiomalaska.com)

Abstract:
Datasets describing seabird metrics are geographically distributed in nature and fundamentally heterogeneous in storage formats and data structures. Strategies for integrating these data assets include a centralized approach (single master database) and a distributed approach (databases that sit in multiple locations but are linked to each other). The distributed approach provides several benefits to researchers and data users over the centralized approach. This talk introduces the concepts of interoperability (communicating data and meaning across heterogeneous data systems), demonstrates interoperability in action with distributed sources of seabird and other ecological data and provides a feasible solution for the management of distributed seabird data on a worldwide scale.

L1d. Distributed versus centralized databases: decision points

Convenor: Scott Hatch (US Geological Survey, shatch@usgs.gov)

Abstract:
Powerful tools exist for linking *servers* (as distinguished from *client* computers) on the Internet. In a distributed system, data providers will have placed their data on a server, and made them available to other servers via so-called *web services*. The feasibility of this approach for building comprehensive seabird databases depends on the willingness and ability of each participant (organization or individual) to administer a participating server. The appropriate architecture for world seabird databases will therefore depend on: (1) the type and current status of data (i.e., colony registers and pelagic survey data may be amenable to a distributed approach; monitoring, tracking, and diet information probably less so), and (2) whether the systems are envisaged to be *all-inclusive* or limited to a number of *major players*. For data not currently online or already stored in shared databases, data contributors and users may be better served by centralized systems. This workshop will introduce and illustrate the concept of Seabird Research Markup Language (SRML), an essential step in implementing either approach, and a way of rendering the distinction largely moot.

L2. World Seabird Colony Register

Convenors: Ben Lascelles (BirdLife International, Ben.Lascelles@birdlife.org)
                 David Irons (US Fish and Wildlife Service, david_irons@fws.gov)
                 Susan Waugh (BirdLife International, susan@birdlifepacific.org.fj)
                 Scott Hatch (USGS Alaska Science Center, shatch@usgs.gov)

Abstract:
A wide range of databases already exist that contain information on seabird breeding colonies; however these have generally been established for specific regions, countries or projects, and have therefore evolved in isolation from each other. This has meant that there is often a lack of commonality between them that would allow for information exchange, comparisons, and/or global analysis to be made.

The establishment of a world seabird colony database will help us gain a better understanding of how seabird populations fluctuate over time and space, allow for additional analysis related to existing and emerging threats (e.g. climate change), assist prioritisation exercises at regional and global scales (e.g. those sites most in need of alien eradication) and help identify future management priorities.

The aim of this workshop will be to establish and maintain a protocol for a world seabird colony database. To achieve this, the workshop will begin with a selection of introductory talks. These will look at a number of existing databases to gain a clear understanding of what fields are currently used when recording data, and identify where commonalities/differences lie and discuss how these might be resolved. A proposal for the structure of a global database will be compiled prior to the workshop through discussions with key relevant stakeholders, and the workshop will be used to discuss/promote this to a wider audience.

Draft Program:
1. Introduction: vision for WSCR; why do we need a WSCR? Links between WSCR and other legacy workshops. Outline plan and objectives of workshop (Lascelles) (5 mins)
2. Examples from existing colony databases. How would a WSCR benefit them?
   a. ACAP colony database (ACAP representative) (10 mins)
   b. North Pacific Seabird Colony Database/Seabird Information Network (Irons) (10 mins)
   c. The BirdLife International World Bird Database (WBDB) (Lascelles) (10 mins)
   d. Establishing a new seabird colony register in New Zealand and the Pacific (Waugh) (10 mins)
3. Issues/floor discussions – key questions (lead by Lascelles) (60 mins)
4. How to take forward the creation of a WSCR? Proposal for a working group (Hatch) (10 mins)
5. Anonymous ballot/feedback

L3. Tracking Marine Ecosystem Response through Seabird Mortality Events

Convenors: Julia Parrish (University of Washington, jparrish@u.washington.edu)
                     Hannahrose Nevins (Moss Landing Marine Labs, hnevins@mlml.calstate.edu)

Abstract:
There is a need for regional (and global) detection and science-based assessment of significant seabird mortality events. Recent increases in the frequency and intensity of both natural (prey reductions) and human-related (HABs) mortality events has driven a need for the development for long-term, cross-study regional data centres with ability to synthesize data in a timely manner and disseminate information via coordinated press releases among agencies, NGOs, institutions and on the web. We will review significant mortality events in the last 10-20 years along the west coast of North America (as a case example) and develop a comparison of relative importance based on science-based assessment vs. media-based information. Outcome will be the formation of a group of interested organizations and individuals who would like to participate in a global web-based reporting system of seabird mortality events.

Thursday, September 9th

L4. World Seabird Governing Committee

Convenor: John Croxall (BirdLife International, John.Croxall@birdlife.org)
                    Kees Camphuysen (Royal NIOZ, camphuys@nioz.nl)
                    David Irons (US Fish & Wildlife Service, david_irons@fws.gov)
                    Patrick Jodice (USGS and Clemson University, pjodice@clemson.edu)

Abstract:
The purpose of this meeting is to determine whether there is interest in creating a permanent world seabird committee that would: a) ensure the next World Seabird Conference happens; b) establish effective communication between existing seabird groups (and/or broader seabird community), via a global seabird web portal; and c) oversee the development of initiatives benefiting from global and /or regional coordination/interaction. If there is sufficient interest in a world seabird committee then it would need to establish, at this World Seabird Conference, the basis for an appropriate governance structure and some key sub-committees, e.g. : a) WSC Committee: responsible for selecting host/venue for next WSC and then becoming/handing over to an appropriate Steering Committee and Local Organising Committee; b) Communications Committee: responsible for establishing effective and efficient communication between existing seabird groups (and/or broader seabird community) via a global seabird web portal (It will likely require a permanent dedicated resource to achieve this) ; c) Database Committee: responsible for establishing mechanisms to develop and manage a system of global seabird database networks, including development of appropriate seabird indices. (This will also have significant resource requirements).

L5. World Seabird Monitoring Database (WSMD)

Convenors: Scott Hatch (USGS Alaska Science Center, shatch@usgs.gov)
                  Ian Mitchell (Joint Nature Conservation Committee, Ian.Mitchell@jncc.gov.uk)

Abstract:
Seabirds are cost-effective indicators of large-scale change in the marine environment. The sensitivity of birds to ocean temperatures, weather, and climate, increases the relevance of seabird monitoring in an era when global climate change is an overarching concern. Implicit in the strategy of using seabirds as global indicators is a requirement for collective and shared availability of monitoring results to support open, synthetic, and interdisciplinary uses of the data. To realize fully the benefits of seabird monitoring worldwide, an Internet-based data management system is needed that is capable of timely and comprehensive dissemination of results. The prospective World Seabird Monitoring Database (WSMD) will collate time series of measured population parameters—numbers, productivity, survival, breeding chronology, and others. An important initial step in creating a global database is a comprehensive inventory of past and ongoing effort in seabird monitoring worldwide. Contributors to this workshop will have initiated such an inventory in advance of the meeting. Results will be presented in a series of brief regional reports and collated as one important product of the workshop, another being an action plan for achieving the goal of a global system. The workshop will include an introduction to the design of the Pacific Seabird Monitoring Database (PSMD) and its web implementation, a potential model for the global effort.

Draft Agenda:
1. Introduction: vision for WSMD; plan and objectives of workshop (Hatch/Mitchell) (5 mins)
2. Why bother? Are global seabird databases (monitoring in particular) a worthy goal? (Sydeman – marine science/Byrd – conservation applications (10 mins)
3. Introduction to PSMD model: online demo of contributor and user interfaces (Hatch) (45 mins)
4. Issues/floor discussions[a] (Hatch/Mitchell)
5. Anonymous feedback[b] (workshop participants)

[a] Open-mic discussion of issues pertaining to creation of a WSMD:
   • Is a world seabird monitoring database desirable? Why or why not? What would be the benefits?
   • Who should have responsibility for managing a world seabird monitoring database? What are the costs and who should pay?
   • What existing sources of data can be identified?
   • Who owns seabird monitoring data?
   • What are participants' personal concerns/reservations about such data-sharing?
   • Are there volunteers/nominees for a dedicated working group? What should be their qualifications?

[b] Additional feedback (identity optional) from participants on above issues, or others. Participants complete questionnaire which they drop into "ballot" box on way out (or within 24 h); results summarized at WSC closing plenary.

L6. Seabird Tracking Databases

Convenors: Scott Shaffer (San Jose State University, Scott.Shaffer@sjsu.edu)
Autumn-Lynn Harrison (UC Santa Cruz, harrison@biology.ucsc.edu)
Cleo Small (Royal Society for Protection of Birds, cleo.small@rspb.org.uk)
Phil Taylor (BirdLife International, phil.taylor@birdlife.org)

Abstract:

Remote tracking data for seabirds are rapidly becoming available for an ever-increasing range of species and marine areas/habitats. Effective utilisation, whether for academic research or for application to a range of marine conservation topics, requires enhanced coordination and data sharing, and easy access to relevant analytical tools and marine environmental data. This workshop will: a) highlight scientific and conservation benefits of enhanced coordination and data sharing of seabird tracking data, and identify key future conservation applications; b) showcase existing platforms and databases which host seabird tracking data; c) seek to identify the ways in which seabird tracking data might be better interconnected, *inter alia*: facilitating interactions between data from different databases (primarily tracking data, but also environmental data and seabird-at-sea survey data); ensuring compatibility between databases, potentially including common protocols for filtering and validation and common protocols for data access; promoting large-scale projects involving a wide range of scientists to tackle key scientific, conservation and management issues on regional or worldwide scales.

This workshop accompanies a workshop on seabird at sea survey data (L7) and will be followed by a combined session (L9) to address issues of mutual interest.

Agenda

Presentations (1 hour)

- Introduction: Conservation uses and benefits of seabird tracking databases (Shaffer) (10 mins)
- The Global Procellariiform Tracking Database (Taylor & Small) (10 mins)
- The OBIS-Seamap database (Best) (10 mins)
- The Movebank database (Kays) (10 mins)

Discussion (1 hour) (Facilitator: John Croxall)

- What are the needs of data owners and data users and how to encourage addition of data to tracking databases?
- The benefits of linking existing databases and how this could be done
- Identification of key scientific or conservation issues that require collaborative databases

L7. Seabird At-Sea Survey Databases

Convenors: Andy Webb (Joint Nature Conservation Committee, andy.webb@jncc.gov.uk)
                  Kathy Kuletz (U.S. Fish & Wildlife Service, kathy_kuletz@fws.gov)

Abstract:

Data that describe the distribution and relative abundance of seabirds from pelagic surveys exist for all the world's oceans, but in a wide variety of formats, which inhibit their potential as conservation and research tools. Proposals to create a global database of at-sea survey data present a number of challenges, including the variety of survey methods used, differing data models, data quality issues, and seemingly fluid seabird taxonomy. Additionally, research groups and institutions differ in their policies and attitudes to data sharing. There are also technical challenges, not least those associated with the large volumes of data generated by these programs. The workshop will provide a review of existing projects and will explore the potential barriers to establishing a World Seabird Database. Invited speakers will draw on their experience to review how they have overcome the key problems in harmonizing disparate datasets. Presentations will focus on encouraging discussion to address the range and magnitude of the different challenges. The workshop will result in actions for individuals and groups to progress key work areas, and a document that reviews and summarizes the key challenges, and will present options for the World Seabird Database Committee to consider.

Agenda
1. Conservation and research benefits of a global at-sea database (20 mins)
       a. a keynote talk
       b. short open floor discussion to introduce ideas from floor, including "is it desirable to have a world seabird at sea database?"
2. A summary of different survey methods used at sea (15 mins)
       a. a presentation giving an overview with more detail contained in hand-outs
       b. includes time for discussion of other survey methods not mentioned that might have a bearing on how at sea data might be integrated
3. Harmonizing at-sea data: experiences of amalgamating data from different sources (30 mins)
       a. the N Pacific Pelagic Seabird Database
       b. the European Seabirds at Sea Database
       c. [the statistical perspective – accounting for different survey methods] (NB dependent on participation from CREEM)
       d. a web portal for accessing seabirds at sea data
4. Discussion of key issues (55 mins)
       a. who would find a world seabirds at sea database useful and what applications would they use it for? Are regional databases more useful?
       b. is it better to spend time building a web portal for a distributed database or to build a centralized database?
       c. managing data sharing, data ownership, protecting intellectual property
       d. who should / want to sit on a working group to develop a database?
       e. Sign-up for future contact and/or tasks?
       f. How do we want to maintain momentum and contacts? Besides email, how about future meeting?

L8. Seabird Population and Productivity Indices

Convenors: Christoph Zockler (United Nations Environmental Program-World Conservation
                 Monitoring Centre, Christoph.Zockler@unep-wcmc.org)
                 David B. Irons (U.S. Fish and Wildlife Service, david_irons@fws.gov)
                 Mike Gill (Environment Canada, mike.gill@ec.gc.ca)
                 Rob Bochenek (Axiom Consulting, rob@axiomalaska.com)

Abstract:
Information on seabird productivity and population trends can be viewed using a simple web-based information network that accesses and displays information on a common platform to encourage data sharing and display over the Internet. The data portal provides access to immediate and remotely distributed information on seabird productivity, and population trends. The objective is to provide a tool for seabird researchers to share information directly upon coming out of the field. It is also intended to be a rapid assessment tool allowing researchers and decision-makers to investigate current trends and patterns in seabird populations. The platform is easy to use and requires only a few clicks of the mouse to put your information on the web. Information can instantly be compared to other sites within particular regions, oceans and between oceans. The portal provides an immediate assessment of seabird colony conditions serving as an early warning system for widespread breeding failures or population declines. This information is of interest to seabird researchers, managers, the media and fisheries and oceanography practitioners who are using seabirds as effective indicators of marine conditions. A pilot prototype of this system, focused on the Arctic, will be presented. This pilot represents a joint effort between the Circumpolar Seabird Group, the Circumpolar Biodiversity Monitoring Program, the United Nations Environmental Program - World Conservation Monitoring Centre, US Fish and Wildlife Service and Geoconnections. Countries that are currently involved include: Canada, Faroe Islands, Finland, Greenland, Iceland, Russia, Norway, Sweden, UK and US. The session will focus on highlighting this innovative tool, promoting broader participation from the global seabird research community and obtaining feedback on how to improve it.

Agenda:
1. Introduction (Irons) (10 mins)
2. Circumpolar pilot example (Gill/Zockler) (20 mins)
3. What it takes to set up this system (Bochenek) (20 mins)
4. Input from audience (30 mins)
5. Directed discussion (30 mins)
6. Summary/Next Steps (10 mins)

Friday, September 10th

L9. Tracking and At-Sea Survey Database Intercommunication

Convenors: Andy Webb (Joint Nature Conservation Committee, andy.webb@jncc.gov.uk)
Scott Shaffer (San Jose State University, Scott.Shaffer@sjsu.edu)
Kathy Kuletz (U.S. Fish & Wildlife Service, kathy_kuletz@fws.gov)
Autumn-Lynn Harrison (UC Santa Cruz, harrison@biology.ucsc.edu)
Cleo Small (Royal Society for Protection of Birds, cleo.small@rspb.org.uk)
Phil Taylor (BirdLife International, phil.taylor@birdlife.org)

Abstract:
Remote tracking data from instrumented seabirds and observational data from seabird surveys using vessels or aircraft provide potentially complementary data on the distribution of seabirds at sea. Such data are of increasing importance for marine spatial planning, environmental impact assessments (especially for hydrocarbon exploitation) and in defining hotspots for marine biodiversity. This session will focus on discussing the best ways in which remote-tracking and seabird survey data might be made available for coordinated or combined visualisation, analysis and use.

Agenda
Presentations (1 hour)
1.   Overview of the importance/benefits of bringing tracking and at-sea data together
2.   Summary from the workshops on tracking databases and at-sea survey databases
3.   Examples of cases in which tracking and at-sea survey data have been brought together
Discussion (1 hour)
4.   Discussion on ways to facilitate analyses that wish to use both data types

Saturday, September 11th

CP. WSC Legacy Plenary and Closing Remarks

Convenors: David B. Irons (U.S. Fish and Wildlife Service, david_irons@fws.gov)
John Croxall (BirdLife International, John.Croxall@birdlife.org)

Abstract:
The Legacy workshop is developed and presented based on the following main concepts. The objectives of this workshop are to develop the framework to actualize these concepts.
1. Hold another WSC in 5 years
2. Create a permanent global seabird committee/structure to:
    a. ensure the next WSC happens;
    b. establish effective communication between existing seabird groups (and/or broader seabird community), via seabirds.net;
    c. oversee the development of initiatives benefiting from global and /or regional coordination/interaction;
3. Set up mechanisms to develop and manage a system of global seabird databases, comprising at least Colony Register, Monitoring, Tracking/Distribution;
4. Establish an initiative (regional/global) to develop a consistent system of "seabird indicators".

Draft Agenda:
Governance
1. Report from ISC meeting/governance workshop (5 mins)
2. Discussion of:
    a. World Seabird Governing Committee;
    b. World Seabird Conference 2 Committee (15 mins)
Communication
3. Report from Global Seabird Portal (seabirds.net) workshop (5 mins)
4. Discussion of implementation of Global Seabird Portal (15 mins) (This would include closing summary of next steps (e.g. communications committee (via ad hoc group) and resource needs))
Databases
5. Report from seabird indices workshop (5 mins)
6. Discussion of seabird indices (10 mins)
7. Report from seabird colony register workshop (5 mins)
8. Report from seabird monitoring workshop (5 mins)
9. Discussion of monitoring/colony register issues (15 mins)
10. Report of tracking/distribution workshops (2x 5 mins = 10 mins)
11. Discussion of tracking/distribution issues (15 mins)
12. Final discussion on databases (10 mins) (including summary of next steps and resource needs)
Closing
13. Closing remarks (5 mins)