

North American Ornithological Atlas Committee (NORAC)
2012 Workshop – Meeting Notes
Tuesday, 14 August 2012, 09:00-16:00
University of British Columbia
Vancouver, BC, Canada

Organizers:

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Participants:

Rob Butler, Mike Cadman, Margaret Campbell, Andrew Coughlan, Fernando Diaz, Christopher DiCorrado, Steve Dinsmore, Chris Elphick, Peter Davidson, David Hussell, Catherine Jardine, Holly Middleton, Andrea Minoletti, Bob Mulvihill, Rosalind Renfrew, Chris Risle, Vicente Rodriguez, Luis Sanchez, Matt Shumar, Rebecca Suomala, Joan Walsh, Becky Whittam, John Woods

ACTION ITEMS

1. C. Francis to investigate possibility of engaging a contractor to tidy up the Atlas Handbook chapters (at least the most important ones) and bring them to state of completion.
2. A. Couturier to set up a Facebook page or group for NORAC.

Suggested date for next meeting (to be confirmed via the listserv): in conjunction with AOU/SCO/COS, 24-27 September 2014, Colorado

SHORT UPDATES ON CURRENT ATLASES

Eleven atlas projects were represented at the meeting, including the first from South America (Chile). Each project presented a brief update from their region. Many additional atlas coordinators were unable to attend the meeting, but sent written updates. All updates are provided in the Appendix to these notes. We also welcomed two representatives from CONABIO (Mexico) to the meeting to learn about the atlas approach.

COMMUNICATIONS

We had a brief discussion of the listserv (Is it serving our needs? How do we let new atlases know that it exists?). There was consensus that the listserv is useful for committee discussions, meeting announcements, etc. We also discussed social media and ways to get atlasers (and atlases) communicating with each other, sharing stories, photos, experiences, etc. Some atlases use listservs, Yahoo or Google groups, or Facebook for this purpose. We agreed that there is merit in setting up a central Facebook page or group for the atlas community.

DISCUSSION OF HANDBOOK CHAPTERS

Much of the day was spent reviewing and discussing the content of the handbook chapters. The first drafts of these chapters were written by a contractor, based on notes from our past meetings, from published atlases, and various web resources. Little review or editing has been done to the chapters. Although an attempt was made to solicit authorship (and review) from members of the committee, it became clear that no one had time to do this. The chapters will likely remain in an unfinished state unless we can hire a contractor to complete them.

Question to the committee: does the handbook serve a useful purpose? Should we continue to work on the chapters and finish them off?

Conclusion: Yes, the committee felt that the handbook is a useful resource, especially for regions trying to decide whether to do a new atlas. Rather than being prescriptive, and acknowledging that a plurality of

approaches is needed, the handbook should present options and suggestions that have worked well. Much of the value of the handbook, and these committee meetings, is learning from the experience of others. However, and where appropriate, the handbook should make policy recommendations as to best practices (e.g., data from atlas projects should be archived appropriately and made freely available at a permanent web location). It was felt that the handbook could be valuable outside of North America as well (unknown whether a similar committee exists for Europe). Implications of sample design and roll up to larger regions is an area that the handbook could address. Missing from the handbook: How can an atlas change things? e.g., through EAs, engaging people, decision makers, etc.

Our subsequent discussion focussed on chapters where policy decisions or recommendations might be needed, based on our collective experience. The notes from these discussions follow below.

CHAPTER 02 – What is the value of a Breeding Bird Atlas?

Why do it versus something else?

- Training citizen scientists – important for youth engagement (next generation)
- Getting people out where they otherwise wouldn't go
- Ebird approach versus atlas
 - a) Need set of methods to get the most out of ebird
 - b) Ebird could become a front end portal for atlas projects, but needs structure to maximize its value
 - c) Lack of sampling protocol with ebird makes it more challenging to analyse and less robust for decision making
 - d) Calculating change is a challenge with any approach but especially with ebird
 - e) Atlas forces the documentation of all species in a standardized way – unlike ebird
 - f) Does not provide adequate data for nocturnal and secretive species
 - g) Does not provide nesting phenology data
 - h) E-bird does not provide the same level of detail on distribution because less incentive to visit new areas to fill gaps
 - i) Atlas may help to understand change and reasons for change better
 - j) Massachusetts found that both atlas and BBS provide “blunt” data
 - i) In many cases, numbers declining (BBS) but ranges still occupied
- Engaging landowners – atlas projects give an excuse to make contact with ranchers (for example) and make a connection for future work
- BBS doesn't always sample all species very well. Neither does ebird, because it's more casual in its participation and culture.
- Potential for additional analyses from atlas data hasn't been realized. BBS a blunt tool for showing a signal for future work. Atlas helps to drill down. Even there, further investigation is often needed.
- SAR – atlases are a critical source of information for listing agencies, etc. Can't get it from BBS or other sources. Atlases are the “go-to” source, in part because of detailed extra records on priority species.

CHAPTER 05 – Recording species evidence and effort data

Recording detailed species information:

- in Pennsylvania – added species to Rare/colonial species
- asked for georeferenced data for individual observations for a species (at least for confirmed breeding evidence.
- (added extra data on hemlocks and health of the hemlocks).
- Added advantage of inside- vs. outside – better location information
- This should improve with increased use of mobile smartphone apps tied to GPS, etc.

Daily checklist data

- can actually increase participation because always get to record data even if no new species added
- data entry apps for birding will make a big difference
- enhances value of data in several ways:
 - o more precise breeding phenology information (dates for every observation)
 - o better information for estimating detection probabilities and changes in occupancy

Breeding evidence codes

- Canadian atlases have implemented a training quiz re: acceptable codes (see Manitoba and Quebec websites)
- How many atlases use the “used nest” code? And when is it used?
 - o 2 concerns – correct ID of nest
 - o Was nest active during the atlas project?
 - o Pennsylvania developed a list of species for which used nest is acceptable
 - o Current Canadian atlases (e.g., Quebec) provide specific warnings to atlasers who use codes that are unusual or may not be appropriate for a specific species

CHAPTER 07 – Quantitative sampling to estimate abundance

- PA used habitat data to model changes in occupancy
- NV collected categorical estimates of abundance, but not many records received and not judged to be very valuable. Not nearly as good as true quantitative sampling.
- Daily checklist approach – should this be a recommendation for atlas projects?
- Iowa did encourage daily checklists, but people did not always record it; just upgrades

What have states that did point count analyses learn that they didn't have from, e.g., BBS

- Pennsylvania far better coverage than BBS data
- Will set stage for much better comparison in 3rd atlas
- Changes in occupancy
- Some adjustments for differences in effort between the atlases
- Some differences from BBS that will help to drive conservation planning at state / local levels
- Very glad made investment in getting quantitative data that we've got so far. Used Habitat-based models

RECOMMENDATION: sampling for abundance, whether by point counts or another method, should be a core component of all new atlases.

CHAPTER 08 – Significant species data

- Atlases are one of the best ways to obtain rare species information
- because out birding anyway, and not just looking for individual rare species
- everybody is on board – has a beginning / middle / end
- State of Pennsylvania has various ongoing efforts to survey for particular rare species
 - o gets used widely for rare species
- in Ontario – over 10,000 records for rare / colonial species
- useful for mapping critical habitat
- PA and ON: atlas data used for listing rare species
- Benefits of standardized protocols for third parties using data, because easier for them to use compared to, for example, e-bird data
- critical to get extra information on these species from atlases

RECOMMENDATION: make data entry for rare species as easy and obvious as possible, with links from general data entry form directly to the rare species form, ideally pre-populated with selected fields (species code, square, date, etc.)

CHAPTER 09 – Habitat data

Question of observer-collected vs. remotely sensed data. Is there any value to observers recording habitat information alongside bird records? Do atlases use remotely sensed habitat data to plan their atlases?

Nevada

- used remote sensed habitat data to stratify sampling scheme
 - used for later analysis to look at probability of occurrence
 - (confusion about explanation of what it meant – probability of detecting a species in a block if block has x% of habitat y)
 - Asked atlasers to record habitat where they recorded each bird, based on a fairly simple habitat
 - Some confusion in what data were recorded
 - Data do exist, but have not been heavily used
 - Prior to atlas, basic natural history information was not available for a lot of species.
- Problem that features of interest to birds (snags, micro-habitat characteristics) are not obtainable from remote sensing.
 - a) BC atlas set up “important bird features” classification to address this. More than general habitat types and modifications.
 - b) PA – hemlock and impacts of deer were specific questions and dominant habitats (recorded within 50m of point counts done by paid crews) were used
 - Potential values of habitat data
 - a) ground truth remote sensing data
 - b) but, difficult to roll up into any kind of analysis (Canadian atlases have been collecting habitat data at rare species locations, but this information has not been used)
 - c) volunteers are not necessarily vegetation experts, so uptake will not be uniform; may only get paid crews to record this information
 - d) rationale for collecting habitat information needs to be clear and demonstrated

RECOMMENDATION: use tick boxes for habitat codes or something similar, NOT narrative text boxes on rare species forms.

CHAPTER 13 – Analyzing atlas and change data

- Margaret Campbell presented on recent work from the Maritimes Atlas
- Estimated effort for squares without effort data recorded using Generalized Additive Models (GAM) that had been developed for squares / cards that did have data
- Lots of challenges with missing and incorrect data
- Estimated probability of observation after 20 hours of effort
 - a) mapped change in probability of observation
- exploring occupancy models among years
- some work about autocorrelation
- Pennsylvania (Andy) used Winbugs to fit occupancy models
- BBS gives good population change information at the continental scale. Atlas data can supplement and refine this at finer scale.

RECOMMENDATION: Use daily checklists so that problems with effort and detection can be minimized.

CHAPTER 15 – Atlases in Latin America

- Mexico is trying to establish BBS routes and train people to run them.
- Challenge is lack of interest in birding
- In Mexico most people don't know many birds
- Problem, especially for BBS, people don't have vehicles to get there to run routes, and it can sometimes be a dangerous activity
- 8 regions in Mexico with local people and a regional coordinator gathering data – enter into Access then upload into e-Bird
- Might be worthwhile to try a more formal atlas in a smaller region or even an urban area as a first step.

APPENDIX A: UPDATES FROM ATLAS PROJECTS

British Columbia – Christopher DiCorrado

- last field season in 2012
- see powerpoint for interim stats. ~10,000 field hours / year
- ~10,000 10x10km squares; about 40% have at least some data
- ~1200 participants, but many fewer actually entered data
- Challenges:
 - o Funding – several last minute decisions
 - o Public motivation; many birders
 - o Vast remote areas – both northern and high elevation
 - o Some large block gaps still remain
- Access by all sorts of means – plane, boat, helicopter, horseback, etc.
- Do we need a 6th year?
- Should we get some crews to fill in gaps?
- Showed some sample maps – OSFL
- Next steps – data assessment and clean-up
- Data mining – extracting data from other sources
 - o Consultants, BBS, owl survey. But also collecting some older data.
 - o ~40-60 external data sets that are compatible (forest industry surveys, etc.). especially helpful from areas with no volunteers.
- Data management and analysis
- Publication and additional research
- Pine beetle, climate change, hybridisation
- Book vs. e-book
- Mountain pine beetle – can look at possible impacts and relation to bird distribution
- Redrawing range maps

Connecticut – Chris Elphick

- talk about doing a 2nd atlas, but not well mobilized
- currently a small county-based atlas
- on a committee of a grad student (at CUNY) doing work on combining data from various eastern states

Massachusetts – Joan Walsh

- Massachusetts finished 5 years in 2011. Good coverage – have zero blocks with no roads, but still don't have 100% coverage. On average have about 20 more species per block than first atlas
- One of first states to do a first generation atlas
- Continue to find flaws in first atlas. First atlas did not have hours or effort data recorded. Original paper data no longer exist (thrown out about 9 months before decided to run 2nd atlas). Observer names were recorded originally, but data are not retrievable.
- Some of these species increases are real (expansion of some species such as WITU, RBWO, COHA – additions due to reforestation (as documented by other data sources)
- One of challenges is to figure out how to use data from first atlas to compare with current atlas given weaknesses of first atlas.
- May use species differential as a surrogate for effort.
- No “safe” dates during first atlas
- About 24 species were added to breeding list within “safe dates” – not all confirmed
- Looking at landscape data
- Book is half-way written. Likely to spend less time on writing about natural history, more about changes in distribution
- Species accounts being written by 2 people, and then will send out for review, rather than other way around
- Preparing as an E-book. Also an interactive website with accounts for each species (should
- There will be some sort of a paper document – an atlas summary – the 2nd atlas

- Last year Massachusetts did a "State of the Birds in Massachusetts"
- Might do abundance data on in-between years, but have 23 BBS routes in state which provide fairly good information.

Vermont – Rosalind Renfrew

- atlas was 2003-2007
- book is finally in press
- randomly selected priority blocks (1/6 of USGS quads)
- this atlas selected 2nd random block from each atlas
- did not do abundance data either – would have liked to, but lack of funding
- quite a few older atlasers who did not want to complicate life with things like "counting"
- still had old paper data, but much less information
- 2nd atlas did collect effort data (hours information)
- Using number of species as a surrogate for effort for comparing 1st with 2nd atlas
- Only 2 more species per block on average
- Volunteer authors – 22 different authors each with their own writing styles. Edited to some degree, but not fully standardized.
- Producing a book because a donor provided funding (publishing with university press in New England)

Ohio – Matt Shumar

- 2006-2011
- originally planned 5 years, but stretched to 6 (which matched first atlas)
- 3 miles x 3 miles blocked.
- Surveyed 1 in 6 on first atlas
- See powerpoint for stats
- Use distance sampling and time sampling (5 2-minute intervals)
- All point counts were paid crews (5-6 individuals per year)
- Pilot in 2007, most collected in last few years
- Quite a bit of missing effort data from both atlases
- Many volunteers signed up, but most data from ~50 people
- Quite a bit of data mining (state agency efforts, BBS, e-Bird (a very large e-Bird community in Ohio – over 1 million submitted of which ~100,000 were useful, though some may be duplicates))
- ~4400 blocks all with at least some data, but coverage varies
- Priority blocks have good effort data
- Needed a lot of effort bugging people to get their data entered
- Generated detailed summary statistics for each atlas
- Working with Andy Wilson (who did Penn. Atlas) to analyse their point count data (they did 8 counts per square in all squares)
- Writing species accounts with ~4 authors rather than dozens
 - o Aaron Boon, Paul, ...
- Preparing a hard-copy book
 - o Many Amish birders who don't use electronics
 - o Developed a species sponsorship person
 - Auctioned off species accounts
 - Raised >\$12,000 this way
 - Software could be made available (developed in Wordpress with a \$40 auction plug-in – took a lot of his time).
 - o (Massachusetts tried something similar, but at flat rate - \$1000. Sold 10 species, but now stuck)
 - o But also raised awareness and need
 - o (Dutch atlas did something similar – British Atlas (BTO) did a flat rate sponsorship)

Iowa – Stephen Dinsmore

- no such thing as remote areas – 1 mile road grid!
- First atlas got extended a 6th year

- Used same grid sample as first atlas
- Stratified random sample
 - o Need to find out more about sampling
- Iowa has smallest % of natural land and publicly owned land in US
- Picked squares with at least some protected lands
- Everything made available electronically
- Real time data entry
- Data base backed up every 24 hours
- Have a retired web programmer who is managing data base free
- Using server space from State.
- Many data summary features
 - o Can plot by block, species, etc.
 - o Data from OBBA-I (1985-1990) are all available as a layer
- All blocks have minimum 5 hours coverage
- 196 species reported, 168 confirmed nesting
- 153 users, but top 10 have >50% of effort
- Grid block coverage – 1 in 6
- Habitat block coverage – squares that actually still have natural habitat left
- Provided advice to people to encourage more effort in areas with less coverage
- Data entry portal to be closed in Sept, do verification and analysis
- Plan to publish a book
- First atlas, state bought ~1000 copies of books and donated them to schools, etc. Still negotiating for this year.
- Plan a small team of authors (~3 authors)
- Text will focus on change.
- Will delay on-line access until after book is published to encourage sales
- Did not do abundance sampling, but state has a very extensive monitoring program – data exist from other sources

Quebec – Andrew Coughlan

- some U.S. funding from NMBCA (\$200K)
- using a Yahoo discussion group – atlasers communicate with each other
- has been tried elsewhere, but didn't work as well in some states
- worked well in Quebec
- a lot of owl atlassing
- talked about features of website

Manitoba – Andrew Couturier (for Christian Artuso)

- same stage as Quebec Atlas, i.e., three years of field work complete
- issues with inaccessible parts of the province
- lack of birders
- still, coverage to date has been very good

Maritimes – Becky Whittam

- 3 provinces – New Brunswick, Nova Scotia, Prince Edward island
- 8 partners on steering committee (federal, provincial and NGOs)
- Fully bilingual
- Developing some new habitat analyses
- 2nd generation atlas – change analyses
- Fundraising...\$1.9 million over 7 years
- 2006-2010 coverage
- 13,500 point counts
- 1 in 4 squares was a priority for coverage. Wanted at least 20 hours of effort in priority squares
- See powerpoint for a few more stats
- Summary of some major species changes
- Species accounts written by volunteers, but extensive extra work. This is the slow route.

- Only talking about change – keeping to 250 words

Chile – Fernando Diaz

- only working on breeding species – not wintering and migrating species (although these records are also captured)
- very little information on distribution
- Plan to produce a book eventually. Collect over 4 years + 1 year for analysis and publication
- Breeding evidence codes
- Using 20 x 20 km squares – have a Google Earth layer to see squares
- Started Sept 2011 – August 2015
- 1 year for analysis, etc.
- 2017
- Using special portal in eBird for Chile
- <http://ebird.org/content/chile>
- Many people in Chile are using eBird
- No paper format
- Target is 20 hours in each square

Ontario – Andrew Couturier

- printed 4500 copies in English
- sold all but about 300
- broke “even” on printing/design (ignoring substantial cost to translate to French after the fact)

Pennsylvania – Bob Mulvihill

- Second atlas has gone to print and is now for sale!

Canadian atlas committee – Mike Cadman

- Committee established to guide the planning, funding and timing of atlas projects across Canada. Also to discuss and implement standard approaches, analysis methods, etc., to encourage consistency and economies of scale across projects.
- Sub-groups meet as required on topics of interest.
- Will feed back information to NORAC as appropriate.
- Committee consists of Environment Canada representatives and BSC staff from regions in which atlases are ongoing or planned. Other experts or stakeholders are engaged when needed.

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Updates submitted by those who could not attend:

Arkansas – Kim Smith

The Arkansas Breeding Bird Atlas is going to be combined with the second edition of Arkansas Birds by Douglas James and Joseph Neal. The book will be titled Arkansas Birds and Breeding Atlas. It will be published by the University of Arkansas Press and out in 2013.

Colorado – Lynn Wickersham

- COBBAIL initiated in 2007
- 20 year interval since initiation of Atlas I
- 2012 marks the 6th and final year of data collection
- For each species in each block, we are collecting:
 - a) Breeding code
 - b) Habitat code
 - c) Date

- Data will be used to create:
 - a) Quad-level species distribution maps
 - b) Quad-level change maps (compared with Atlas I)
 - c) Graphical/tabular representation of habitat-use and breeding phenology
 - d) Analysis of effort and results between the two atlases

- Coverage to date

a) Total Priority Blocks	1,792
b) Priority Blocks Assigned	1,714
c) Priority Blocks with Data	1,698
d) Priority Blocks Complete	1,402
e) Block Effort Hours	43,804
f) Total Observations	190,883
g) Species Reported	292
h) Species Confirmed	264

- Anticipated products
 - a) We will update the Colorado Breeding Bird Atlas book with revised species accounts and maps.
 - b) We will work with the USGS to develop a database website to present the raw data and maps (and possibly species accounts).
 - c) Estimate date of deliverables is summer of 2014.

Florida – Rick West

- Florida has initiated a 2nd Breeding Bird Atlas, 2012-2016, with a little initial work in 2011. This is 25 years from our first atlas. Our model is that of the Maryland 2nd Atlas, except we are only requiring coverage of the SE block in every Quadrangle, with supplementary birding in other parts of the Quad to build up the species list in each Quad. [Florida concentrated coverage in the SE block, also, in their first atlas.]
- We are using the USGS/Patuxent facility for data management.
- We have introduced a relative abundance aspect with a 15-stop miniroute in as many SE blocks as we can manage. This introduces some problems in the Everglades and on mangrove islands, but we should be able to identify the most important concentrations for many species.
- We are also focusing on producing change maps over the past 25 years, but again have a critical problem -- we have no effort information from the first atlas. We will have to control effective effort based on the average number of species found in each block, and just live with the circular reasoning involved with this approach.
- The Florida Ornithological Society is the lead organization this time around, but Audubon of Florida and the Fish and Wildlife Conservation Commission are cooperators. The latter two were the lead organizations for the first atlas.
- Funds are short, so we are running it unfunded, with each participant covering his own costs. Having Patuxent crunch the numbers is a tremendous help!

We are committed to producing at least a hard copy book with three maps for many species --

- Quad level distribution maps for each species, as was produced online for the first atlas.
- Change maps for most species, based on the changes observed in the SE Blocks
- Relative Abundance maps based on 15-stop point counts taken in the SE blocks for those species with meaningful results.

Minnesota – Bonnie Sample

- First atlas 2009 - 2013
- Anticipated Products
 - a) Online, interactive website
 - b) Data available through the Avian Knowledge Network
 - c) Book

- Data Collection: Distribution
 - a) Volunteers
 - i) 28 Regional Coordinators, in 24 of 32 regions
 - ii) 988 registered participants
 - iii) add: contributors not registered
 - iv) delete: bogus accounts and those who have not submitted any observations – yet
 - b) Paid Atlasers
 - i) Field Surveyors
 - (1) in 2012, hired 6+ surveyors, 5/15 – 7/15
- Data Collection: Relative Abundance
 - a) Natural Resource Research Institute (NRRI)
 - i) Conducted 3 ten-minute point counts in every priority block
 - ii) 2012 NRRI data not yet included in the database
- Using the Cornell data management system

Nebraska – Wayne Mollhoff

- Second atlas 2006-2011
- First atlas versus second:
 - a) Blocks surveyed: 443 | 558
 - b) Total data points: 21,000 | 32,000
 - c) Habitat association data: Not recorded | Recorded
 - d) Habitat patch size: Not recorded | Recorded

Newfoundland – Becky Stewart

- In pre-planning stages; boots on the ground in 2015
- This would be a first for NF and the first comprehensive and up-to-date baseline for breeding birds for insular NF
- Will provide essential baseline information related to bird distribution and abundance and information needed for conservation planning and management efforts
- First time island will be comprehensively surveyed for SAR, over the whole of the island
- Allow for the identification of high priority areas for birds and for conservation
- Broad partnership across various sectors
- Broad community engagement in what will be the province's largest wildlife monitoring effort ever undertaken
- Challenges:
 - Remote and few citizen scientists
 - Much of NF is coastal islands – great success in the Maritimes with coastal trips as well as in BC with trips to remote areas – requires additional staff coordination and logistics can be time consuming

New York – Kimberley Corwin and John Ozard

- Why a book?
 - a) following own precedent
 - b) funds existed
 - c) never truly considered *not* publishing
- Book production
 - a) 2 full-time editors in 2005-2007
 - b) DEC staff as needed
 - c) Steering Committee

- The publication
 - a) 251 species accounts by more than 40 authors
 - b) Current Distribution Maps and Change Maps
 - c) Chapters on NYS ornithology, landscape change, and conservation issues
 - d) Updated Breeding Season Table
 - e) Original black-and-white species drawings
 - f) Original color habitat paintings

- Species Accounts
 - a) Almost half written by Kevin McGowan
 - b) About 40 other authors wrote balance of accounts
 - c) \$200 per account for outside authors

- Budget
 - a) Co-editors - \$365,000
 - (1) Kim 2005-2008
 - (2) Kevin 2005-2007
 - b) Artists - \$50,000
 - c) Authors - \$16,000
 - d) Subsidy to CU Press - \$40,000

- Sales
 - a) 5,000 copies published by Cornell University Press
 - b) 2,442 have been sold
 - c) Cost of book: \$65
 - d) We never expected to “break even.” In fact, a substantial subsidy (\$40,000) was paid to CU Press to publish the book and exclusive rights were given to them for two years!
 - e) We chose to provide a subsidy to lower the price of the book.
 - f) Our contract provided for the rights to publish any part of the book in electronic format two years post publication.

West Virginia – Richard Bailey

- Second atlas 2009-2014
- Some interesting statistics:
 - a) 16,000+ submissions so far 2012
 - b) 98 atlasers submitted data in 2011
 - c) 176 species reported
 - d) 451 of 469 priority blocks with data
 - e) 10,155 hours of effort logged
- Interesting range shifts already evident
- Priorities for 2013 – “Night Birds”