Estimating area-specific contributions to the population dynamics of migratory species
NIMBioS Spring 2014 Meeting 1 Agenda

Day 1, 8:00-9:00am Monday, breakfast at meeting location

Day 1, 9:00am Monday: Introductory stuff:

1) 9:00-9:15 Introductions & logistics [Wayne] (**15 min**)

2) 9:15-9:45 History/motivation of group - conservation of migratory species and migratory processes; why need for migratory contribution metric
    a. difficulties with Ds [Darius] (**30 min**, with discussion)

3) 9:45-10:15 Animal Migration, establishing a common lexicon [John Fryxell] (**30 min**)

4) 10:15-10:30 Discussion of objectives, goals, and desired outcomes. [Brady] (**15 min**)
    a. Overarching goals for working group
    b. How we envision group structure & team member roles
        i. Organize around species but can also organize around other topics.
            1. MTFB, Pintail, Monarchs, Wildebeest
            2. Mathematical issues, carry over, density dependence.
    c. Rough sketch of each meeting
    d. Goals for Meeting 1:
        i. Come to consensus on meaning of Ds/Cr (i.e., spatial dependencies)
        ii. List of planned publications (as a means of focusing group efforts)
        iii. List of potential symposium or conference presentations (as a means of focusing group efforts)

5) 10:30-11:30 Review the Wiederholt et al Cr matrix modeling framework, [Ruscena, Wayne] (**1 hr**, with discussion)
    a. Briefly review model equations (15 min)
    b. Sensitivity analyses results thus far (10 min)
    c. As an example, show preliminary results for 'full' pintail model [Wayne] (10 min)
    d. Go over current model code (10 min)

6) 11:30-12:00 Present other approaches/perspectives to this general question [Ryan Norris] (**30 min**, with discussion)

7) 12:00-1:00 Lunch on site (**1 hr**)

8) 1:00-2:00 Summarize future modeling ideas [Jay] (**1 hour**)
    a. Modify/existing Cr approach: Incorporate males, Annual variability, Migratory stopover sites, Carryover effects, Additional age cohorts, Density dependence
    b. Alternatives to Cr as currently described
    c. Fashion Ds from the perspective of paths, not nodes, in a network [Wayne]
    d. Others proposed by working group participants

9) 2:00-5:00 Go over agenda/goals for species-specific breakouts on Tuesday (**3 hours**)

10) 5:30 Reception (onsite) followed by Group Dinner

Day 2, 8:00-9:00am Tuesday, breakfast at meeting location

Day 2, Tuesday: Breakouts

11) 9:00-10:00 Plenary, go over results of previous afternoon discussions (1 hr)

12) 10:00-10:30 Planning the timing of next meeting (Ruscena)

13) 10:30-11:00 Proposed means of intermeeting collaboration (Wayne)

- Google Drive
  - NIMBioS CrMig folder
    - Access via institutional or personal email (personal only for the Fed folks)
    - For working manuscripts, consider using Google Docs named by date and author initials
    - For equations, share as pdfs (sharing and group editing might best occur via email)
    - If you do share via email, be sure to upload a file to the group folder
    - Literature folder (please upload any recommended readings)

- Conference call number and web meeting
    - TBD; Provided by NIMBioS

- Others (e.g., Skype, Etherpad)?

14) 11:00-12:00, 1:00-3:30 Breakouts (lunch on site @ 12:00-1:00)

- Species-specific breakouts (available relevant models listed for each):
  - Mexican Free-tailed Bats [Ruscena]
    - Wiederholt et al Cr Mig model
    - MFTB network model
  - Pintails [Brady/Mike R.]
    - Mattsson et al population model
    - Wiederholt et al Cr Mig model
  - Monarchs [Jay]
    - Brice Semmens' population model
    - L Ries milkweed availability map/model
  - Wildebeests [Darius/John F.]
- "Topic"-based (cross-species/synthetic) groups
  - General mathematics of Cr, Ds, etc.
    - Alternative approaches to estimating Cr
    - Directly estimating Ds
  - Life history complexities

        - Carry over effects.
        - Density dependence.compensatory vs additive issues and contributions of a patch
    - ➢ Applications of Cr & Ds (decision analysis, policy, etc.) [Tara M./Mike R.]

- ❖ 3:30-5:00 End of day, **goals, structured as a list of publications**.

- ❖ Main topics to discuss in species-specific breakouts:
    1) What does Cr mean, really??
    2) Model additions/refinements -- proposed elements to incorporate
        a. Incorporate males
        b. Annual variability – e.g., climate change, land use change
        c. Migratory stopover sites
        d. Carryover effects
        e. Age-specific vital rates (beyond juveniles & adults only)
        f. Density dependence
    3) Plans for sensitivity analyses – started in straw man paper
    4) Applied angles -- decision analysis, SDM, etc.

Model additions/refinements -- proposed elements to incorporate	**MFTBats**	**Wildebeests**	**Pintails**	**Monarchs**
Incorporate males	y		Y	n
Annual variability – e.g. climate change, land use change	n		Y	not explicit
Migratory stopover sites	n		Y	regional approach
Carryover effects	n		n	n
Age specific vital rates (beyond juveniles & adults only)	n		Y	n
Density dependence	y		Y	n

Day 3, 8:00-9:00am Wednesday, breakfast on site

Day 3, Wednesday:

15) 9:00am Plenary

- ❖ AM: Species-specific groups report back in plenary; lay out achievable goals through Thursday morning

- ❖ PM: A field trip to Great Smoky Mountains National Park

Day 4, 8:00-9:00am Thursday, breakfast

Day 4, Thursday.

16) 9:00am Plenary

Expected outcomes:

Planned publications (as a means of focusing group efforts)

Symposium or conference presentations

Assign tasks. Most will leave this afternoon.

Groups: