Workshop ISEC (3 hours):

Before workshop:

1. Start Github repository to hold all content.
2. Kahoot questionnaire to determine where audience is with regards to content.
   1. Feedback to what people want.
3. Kahoot questions:
   1. Background
   2. What they want to achieve
   3. Inputs/outputs
4. Introduction of each other (5 minutes)
5. What we want to achieve (2 minutes)
   1. Kahoot.
6. Presentation 1: Why we are doing what we are doing (15 minutes):
   1. Distribution modelling
      1. Observation processes
   2. Bias
   3. Software
   4. Basic INLA
   5. Statistical framework
   6. Grand scheme
   7. Kahoot results.
7. Questions (10 minutes)
8. Break (5 minutes).
9. Presentation 2: PointedSDMs (15 minutes):
   1. What it is
   2. Relationship with INLA/inlabru/sf/…
   3. Simple examples + results
   4. intSDM (grand scheme) (move to end)
      1. Mention, but not in great detail.
      2. Compare with PointedSDMs
   5. Discuss structure of the workshop
10. Vignette 1: Example 1: Basic model (Warbler data)
    1. Simple explanation of all the pre-processing:
       1. INLA mesh
       2. Observation data (integration, mention non-integration is possible) + covariates
       3. Other inputs to the model
       4. Defining the model
       5. Cross-validation
    2. Model 1: Covariates (not in detail)
       1. Estimate + predict + plot + (model diagnoses)
       2. Question the model
    3. Questions
11. Presentation: Improvements to model
    1. Discussion
12. Break (5 minutes)
13. Vignette 2: Example 2: Better Warbler model
    1. Split in 2: observation + ecological process
    2. Model 1: spatial field + covariates
    3. Model 2: spatial + covariates + bias term + quadratics
       1. Define priors
          1. PC for the spatial
          2. Gaussian for fixed effects
          3. Other effects
       2. Formula (quadratic effects)
       3. Second spatial effect or covariate to account for bias
       4. Cross-validation
    4. Questions
14. Vignette 3: multi-species model
    1. RF per species + covariates + bias (covariate or field)
       1. Quickly showing priors + implementing bias (repetition)
       2. Estimation
       3. Plots
       4. Cross-validation
    2. Discussions + questions
15. Vignette 4: temporal model
    1. If time permits, present, otherwise mention
    2. Use MEE data (if possible)
16. Vignette 5: marked point process (not presented)
17. Vignette 6: abundance (not presented)
18. Vignette 7: distance sampling (not presented)
19. Vignette 8: own data?
20. Conclusions
    1. Mention available vignettes
    2. Pipelines
    3. Future developments?
    4. What should we improve and implement
    5. Discussions + questions

Moving forward:

* + - 1. Set up Github repository (PointedSDMs\_Workshop)
         1. Presentations
         2. Vignettes
         3. Links to other useful material

INLA

Inlabru

Mesh building

Etc.

* + - 1. Make presentations (All)
         1. 1. Bob (introduction)
         2. 2. Philip (PointedSDMs)
         3. 3. Kwaku (additions to the model)
         4. 4. Ron (multi-species)
         5. 5. Bob (conclusion)
      2. Push package to CRAN (Philip)
      3. Make vignettes (All)
         1. Quarto
         2. Philip new material; rest adapt
         3. Remove all parts that we do not need
         4. Add relevant parts
         5. Interactive with questions
         6. Make results look pretty
      4. Organize meeting to run through everything
         1. Meeting 1: rough sketch of everything
         2. Meeting 2: finished

Download branch: devtools::install\_github(‘PhilipMostert/PointedSDMs@main’) I think