Spatial model complexity

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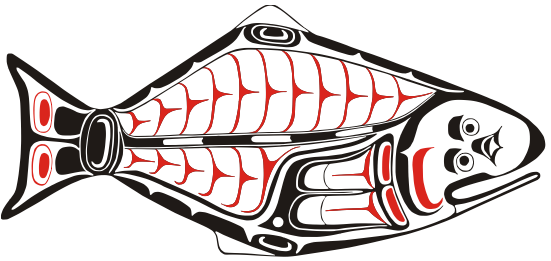

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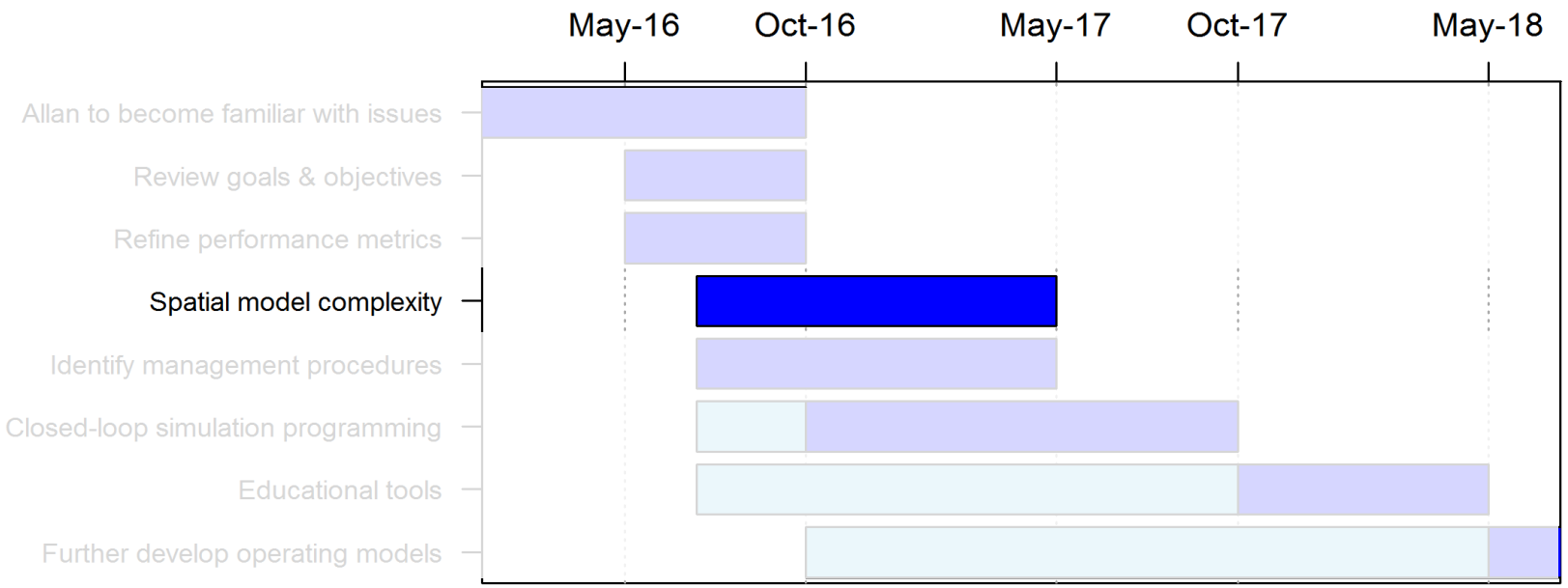
Task 4: Single-area vs multi-area models

- Sub-tasks
  1. Compare single-area and multi-area models in terms of what can be learned
  2. Determine the level of complexity

NOTE: My thinking is that these are always coastwide (entire stock)



Single-area models

- Can tell us
  - How does a coastwide harvest policy perform
    - Does it meet the general coastwide objectives
    - For example, can be used to test a SPR-based harvest policy
  - What are the risks to the stock or fishery as a whole
  - Narrow down management procedures
    - If one does not perform well, it may not be worth further investigation
- Cannot tell us
  - Risks to specific Regulatory Areas
  - About regional management procedures
  - Uncertainty associated with movement/migration, regional differences, etc.

Model complexity

- Can be determined from
  - The questions being addressed
    - Gained from goals and objectives
  - The hypotheses and knowledge of the population dynamics
    - Developed from data
  - Amount of uncertainty to be incorporated
    - Discussions with MSAB members and IPHC staff
  - Time available to develop models
    - In the work plan
  - Time available for simulations
    - Depends on computer resources

Task 4: Resources, Deliverables, Timeline

- Resources
  - Myself with review from MSAB
- Deliverables
  - Describe what is needed to develop single-area and multi-area operating models for use in closed-loop simulations, the resources needed to do so, and how much time it may take
  - Provide a table showing what **measureable objectives** each model addresses
  - Present strengths and weaknesses of single-area and multi-area operating models
- Timeline
  - Initial report in October 2016 with a follow-up in May 2017