### 11/10/2020 Tech Team

Attendees: Adam Collingwood, Danielle, Natalie, Sean

#### Reviewing Data Loose ends - view sheet for reference

- Adam will collect waterton datasets and send to natalie via email or drive
  - Waterton data sets are not included in FWMIS
- Danielle will send Natalie and Sean another possible distribution map for grizzly
- Adam will reach out to Clayton Apps
- Natalie will forward craig's FWMIS request emails to peggy, and peggy will nudge Craig
- Adam will reach out to Tony Cleavanger
- Mineral licks are used as surrogate for important habitat AB only

#### **BC Data Sources/Contacts**

- On the leadership team, we just have someone from the Nature Conservancy of canada
- Adam will ask national parks folks if they have access to BC data sets
- Danielle will reach out to her BC friend for possible BC data contacts

## Discussion on Lynx and Wolverine modeling (Danielle)

- AB does not have a gis data layer for lynx and wolverine
  - However! Prof. Jason Fisher has done lots of work on these species in the foothills of AB - species distribution models - Danielle shared thesis that have different coefficients needed to run model - need veg data layer - climate (spring snowcover) and footprint
    - These are the best data that we have danielle has used these data in marxan before
    - Is this applicable to the whole CCE?
      - Jason believes it is region specific not sure accuracy as we move south Doesn't mean we can't use it, if it's best available
  - In the past, tended to ignore multispecies relationships (gets complicated ie. coyote and red fox) these are difficult parameters to include
  - Danielle can provide python script to show how they've done it input different parameters
    - Wolverine looks at about 2.5km scale

- We could go very simple and just look at spring snow cover persistent snow cover in spring is good habitat for lynx and wolverine
- Options
  - 1. Spring snow cover
    - This would be danielle's suggestion would cover both lynx and wolverine - in the past this is what danielle has done
      - Daniellewill send spring snow cover layer extent is North America
        - Danielle can ask Jason specifically about spring snow cover and if this relationship holds for the entire crown
      - Sean wants to chat with danielle and jason to make sure lynx and wolverine data is good to go
        - Natalie will send an email reminding Sean, Danielle, and Jason to schedule a meeting for end of next week (11/16)
  - 2. Veg map, snow cover, footprint
    - More involved put on hold for now and go with option 1

# **Overview of mapping/scoring process (Sean)**

- LCD Project area
  - Base unit = planning unit
  - Each hexagon gets a value for suitability and costs
- Data is different depending on jurisdiction (MT, BC, AB)
  - So, we will likely run 3 parallel (but separate) marxan models for each of these jurisdictions
  - Marxan doesn't like if planning units exceed about 100,000, so there is an added benefit that parallel models will cut down number of planning units
- Process for scoring planning units
  - MT grizzly example
    - Presence point data and Suitability models (optimal, moderate, low and unsuitable categories) are used
      - Take data sources and score individually Ie. Point observation = 10,000; optimal suitability = 10,000, moderate suitability = 5,000, low suitability = 2,000, unsuitable = 0
        - Using zonal statistics, we could assign those scores to planning units

- This is the method that danielle uses as well usually doesn't add in the observations as well - has to put more thought into implications of this
- Depending on the dataset that goes into zonal statistics, if raster, might have to reclassify to a cell value smaller than planning units - if you have raster larger than planning size, you end up with a bunch of holes
  - Create gis layers from the text files join back to planning unit files
- Questions/Concerns
  - RSF is based on observation data, so are we double counting observation data, since suitability layers may contain observation?
    - We are averaging rather than summing, so not too much of a concern of double counting
  - Adam: be careful with observation data will be heavily biased towards potential sinks (ie. roadsides) - happens to be where the most people are
    wouldn't say a sighting is saying the same thing as suitable habitat
    - There is a difference between observation data and collar data
    - Observation data is biased to resource sinks rather than high quality habitat
    - Might be a good idea to overlay the CMP Grizzly Occupancy model with the output model
    - This approach may be more suitable for other species that aren't just wandering past take a species specific approach
    - Once we have marxan, we can run different sensitivity analysis with and without observation data
      - This can happen at a later stage too