Data Preparation and Analysis Flow Chart

1. Create 30 m, 100 m and 250 m environmental covariates and human disturbance covariates using ArcGIS Pro

2. Visual exploration of caribou location data over covariate rasters

3. Remove outliers and filter caribou location data into seasons

4. Calculate maximum distance travelled in a day from gps data

5. Create aKDE seasonal ranges from GPS collar data; Create MCP seasonal ranges from VHF collar data.

6. Merge seasonal home ranges and add 5 km buffer to define study area and create a raster mask for covariate processing

7. Use raster mask to crop, resample and classify covariate rasters

8. Generate available points across study area for each season and extract covariate values to used and available points.

9. Examine distribution of used and available points over each covariate and run a sensitivity analysis of duplicate covariates at different resolutions to determine the best scale for each season

10. Run initial GLMs and refine covariates for each season

11. Develop a base environmental model for each season using AICc model selection, and check model calibration and performance

12. Use AICc model selection to test the fit of disturbance covariates. Check calibration and performance of best fitting model

RSF scripts Included in Repository