Yukon River Lowlands - Kuskokwim Mountains - Lime Hills Rapid Ecoregional Assessment

Detailed Modeling Guide Document

8/25/2015

Fire

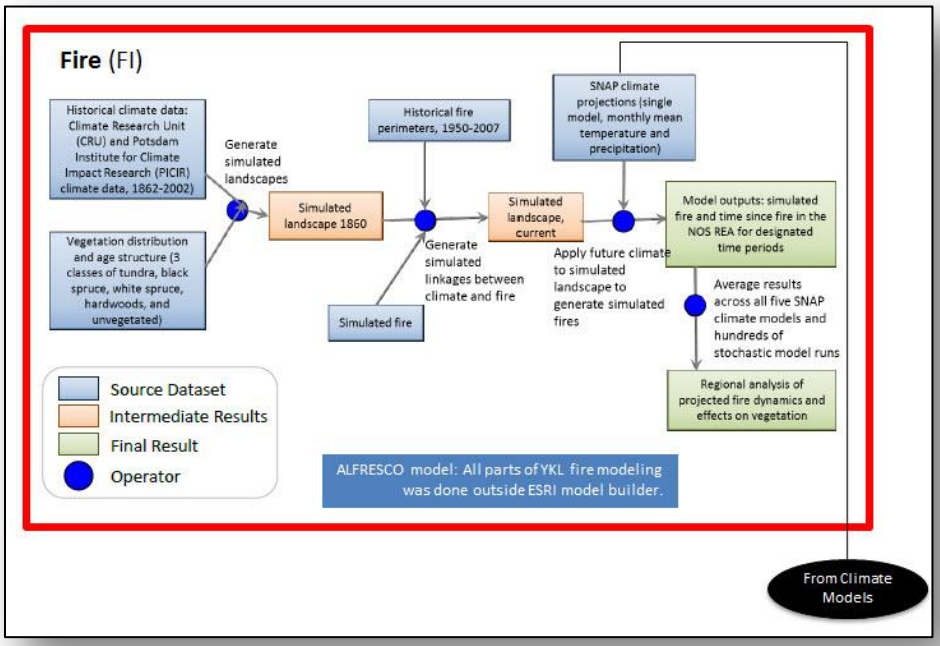
*All Fire geospatial modeling was done within the AlFresco model, not within ESRI ModelBuilder. Therefore, there is no ESRI Toolbox associated with this package. Refer to details below and in the YKL technical report for more details.

Background

The purpose of this document, and all REA detailed modeling guide documents, is to provide a GIS person with the background necessary to understand, answer questions, re-run and modify models used within this REA. All known information and experience related to performing quality control and re-running the models for this section of this REA are documented here. BLM contact information is below.

*Note: This PDF document contains **bookmarks** to assist with navigation.

Toolbox Diagram



(Technical Supplement B, pg. B-51, Insert Geospatial Modeling Toolbox name here)

Notes:

- Historical fire data used to determine patterns, literature review to estimate landscape changes after fire, models used to project fire frequency by region/spatially and a percentage/risk basis
- Fire modeled using Ak Frame-based EcoSystem Code (ALFRESCO) to project future fire regime and effects on veg. classes.
    - Inputs: Historical climate data, Veg distribution and age structure data, BLM Historical fire perimeters (Fire Scar Map), literature on simulated fire linkages between fire/climate SNAP climate predictions
    - Methods
        - 1x1 KM pixels, simulated ecosystem types
        - Each pixel given a probability of ignition and flammability rating based upon vegetation type & age. ALFRESCO model calibrated using literature on burn rates and stand compositions
    - Results: Regional projected fire dynamics on vegetation
    - Tundra modeling not considered very robust, dropped. Boreal forests fully calibrated thru all REA.
    - MQ22. Fire history – Section 2.3, pg. B-57.
    - MQ24. Fire Frequency & Return Interval, Section 2.3, pg. B-59
    - MQ23. Climate impacts on fire: Section 2.1, pg. B-61
    - Note: No ESRI Modelbuilder files/tools/models were used to assess fire within the YKL. See report for further details.