Facilitating the Development of Hazard Services Recommenders

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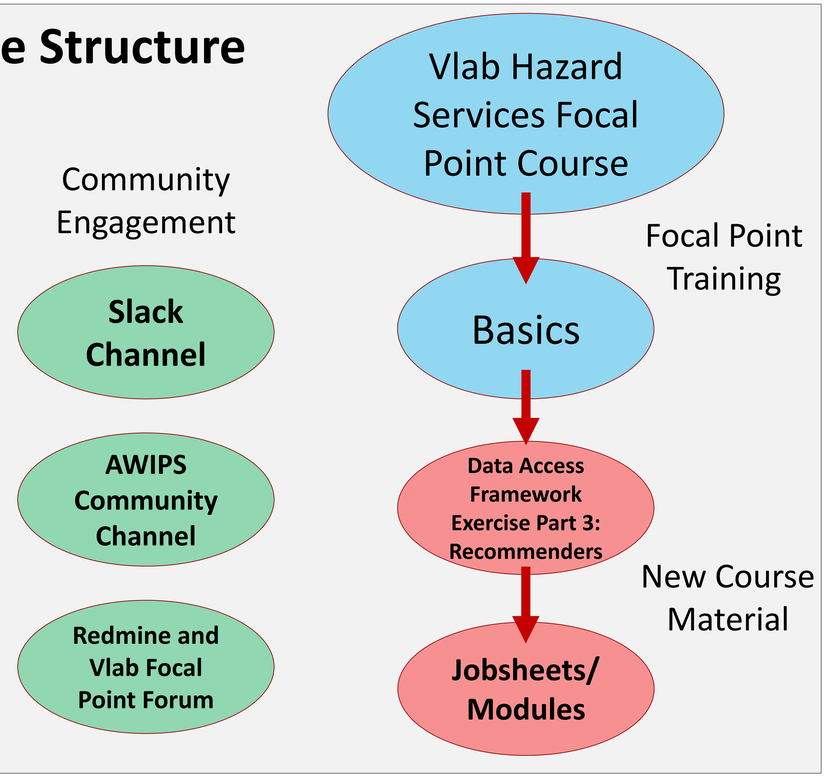
Introduction

Hazard Services is the unifying software for issuing NWS watch/warning/advisory products

- Powerful python/java-based framework utilized for developing new hazard recommenders/tools
- Baseline recommenders existing for river flood, flash flood, burn scar, and dam/levee
- Current Hazard Services focal point course introduces data access framework modification but not building new recommenders
- In next course update, plan to include examples of building and modifying recommenders

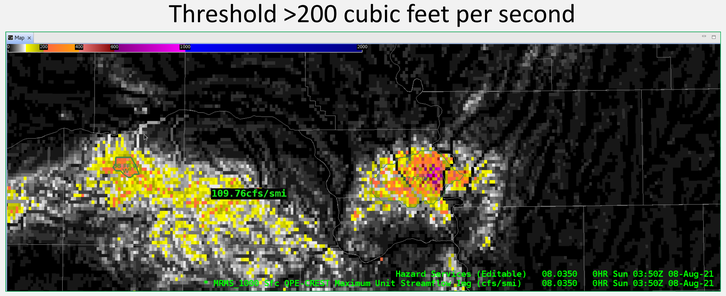
Course Structure

- The focal point course currently covers the unified workflow, Python overview, overrides, metadata/megawidgets, tools/recommenders, settings/alerts
- WDTD plans on adding recommender modification exercises with module/jobsheets
- Engage the community through user forums and a library of examples to aid focal points in recommender modification and creation

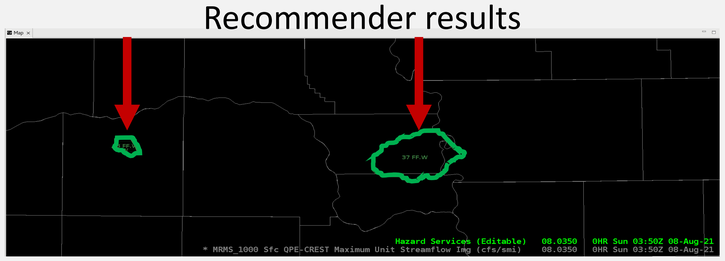


Modified Recommender Example

Multi-Radar/Multi-Sensor System (MRMS) CREST UnitStreamFlow Product: Threshold >200 cubic feet per second

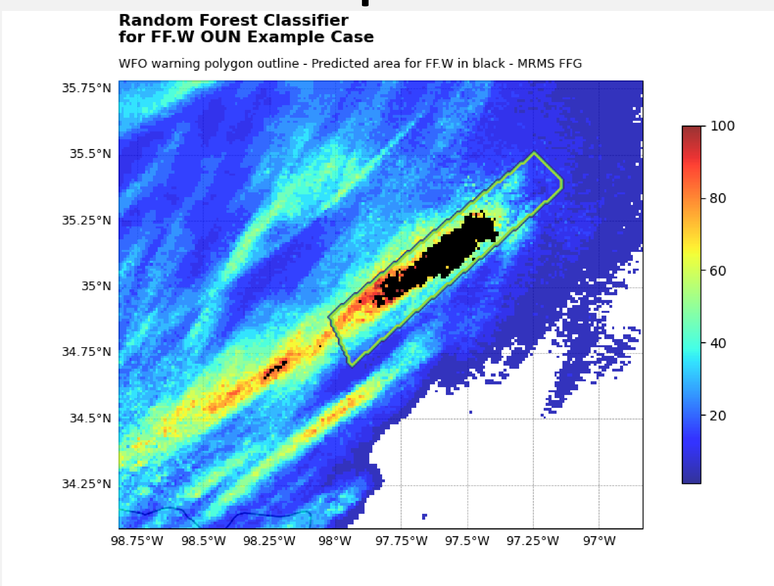


Recommender results



Custom flash flood warning recommender using MRMS sources developed by **Robert Megnia** of the Boston, MA (BOX) WFO

Future Development – Machine Learning Recommenders



Example of a Random Forest model trained on MRMS hydrological products and several National Weather Service offices flash flood warning polygons

- This course is a great opportunity to explore leveraging machine learning integrated with recommenders to produce initial hazards for forecasters to use

Improve NWS warning operations and stimulate a new avenue for more efficient Research to Operations (R2O)!