Webcam Imagery for Rip Current Forecasting

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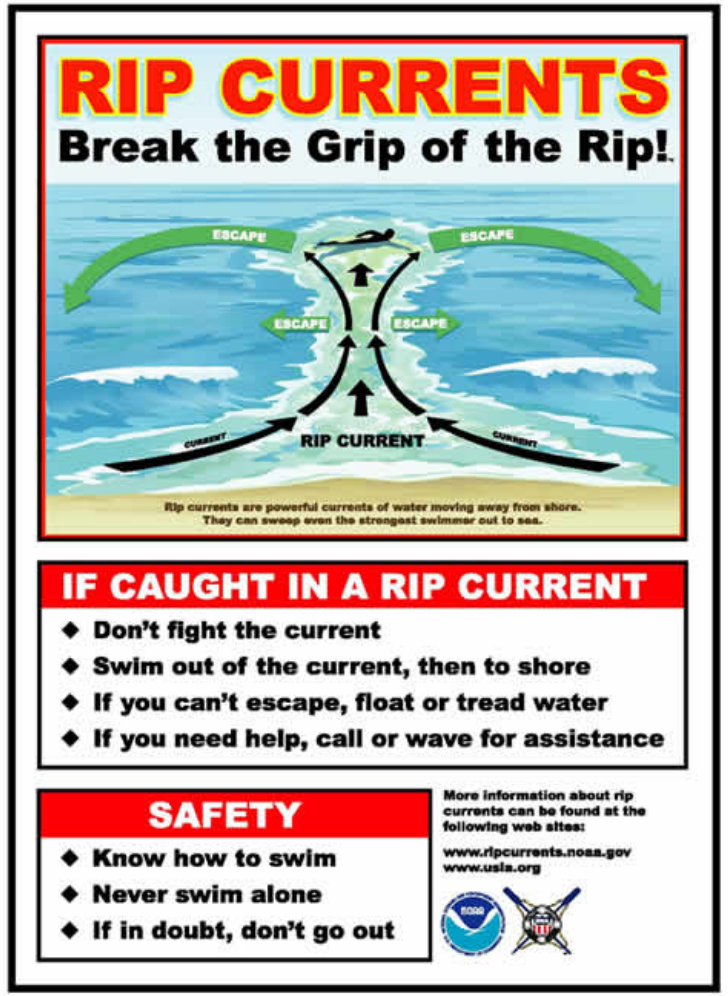
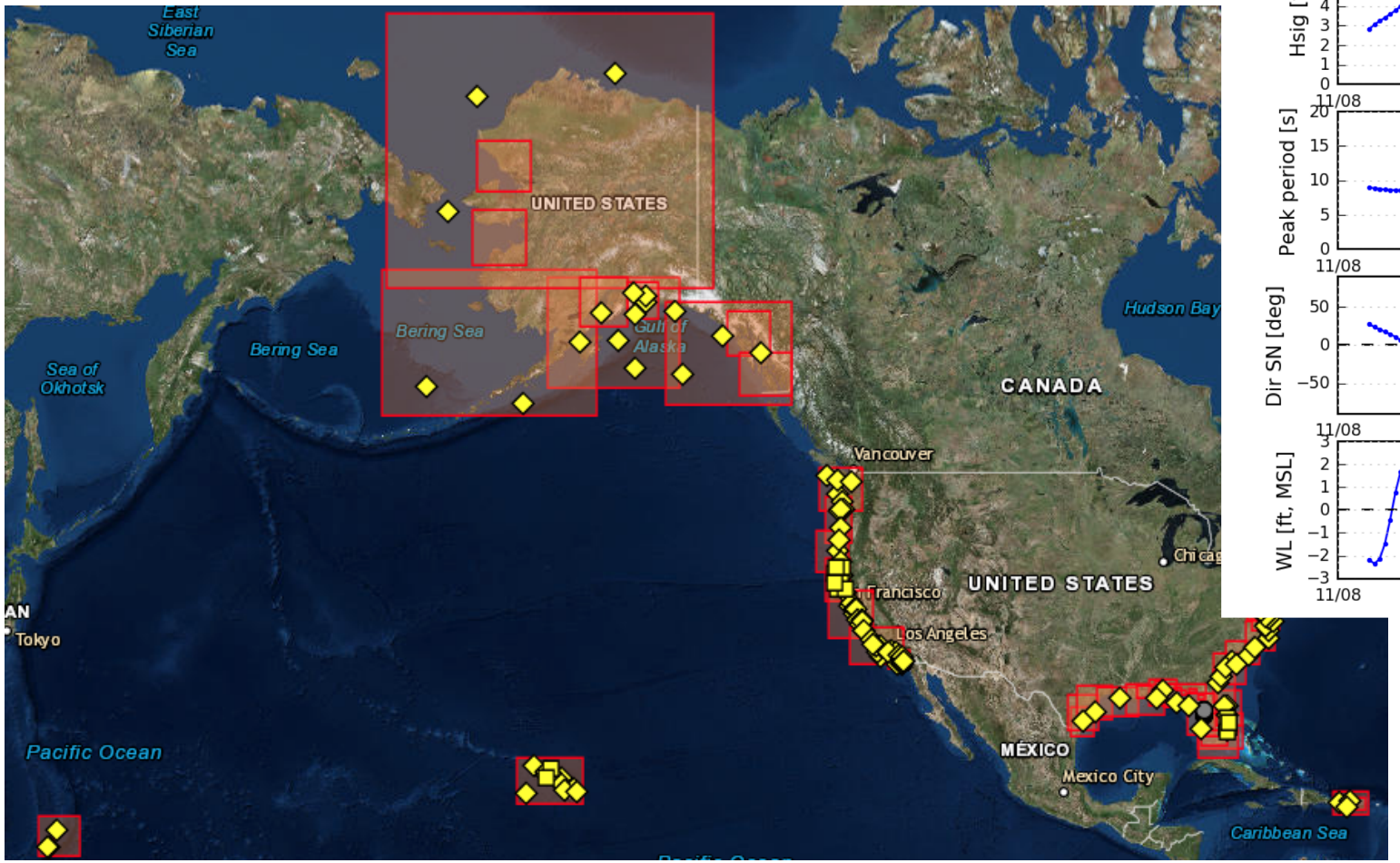
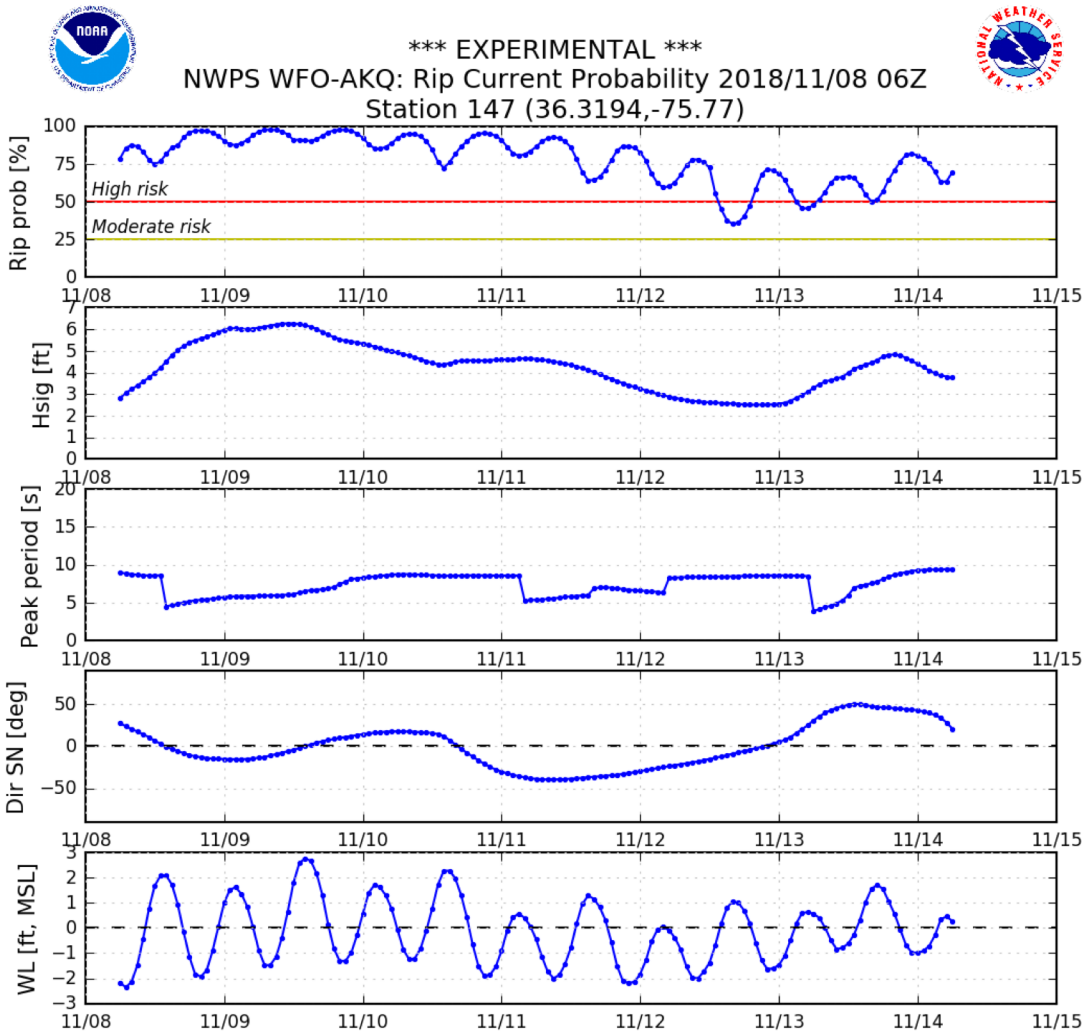
Rip currents are relatively narrow offshore directed jets of water that begin in the surf zone

Estimated over 100 drownings in the U.S. each year



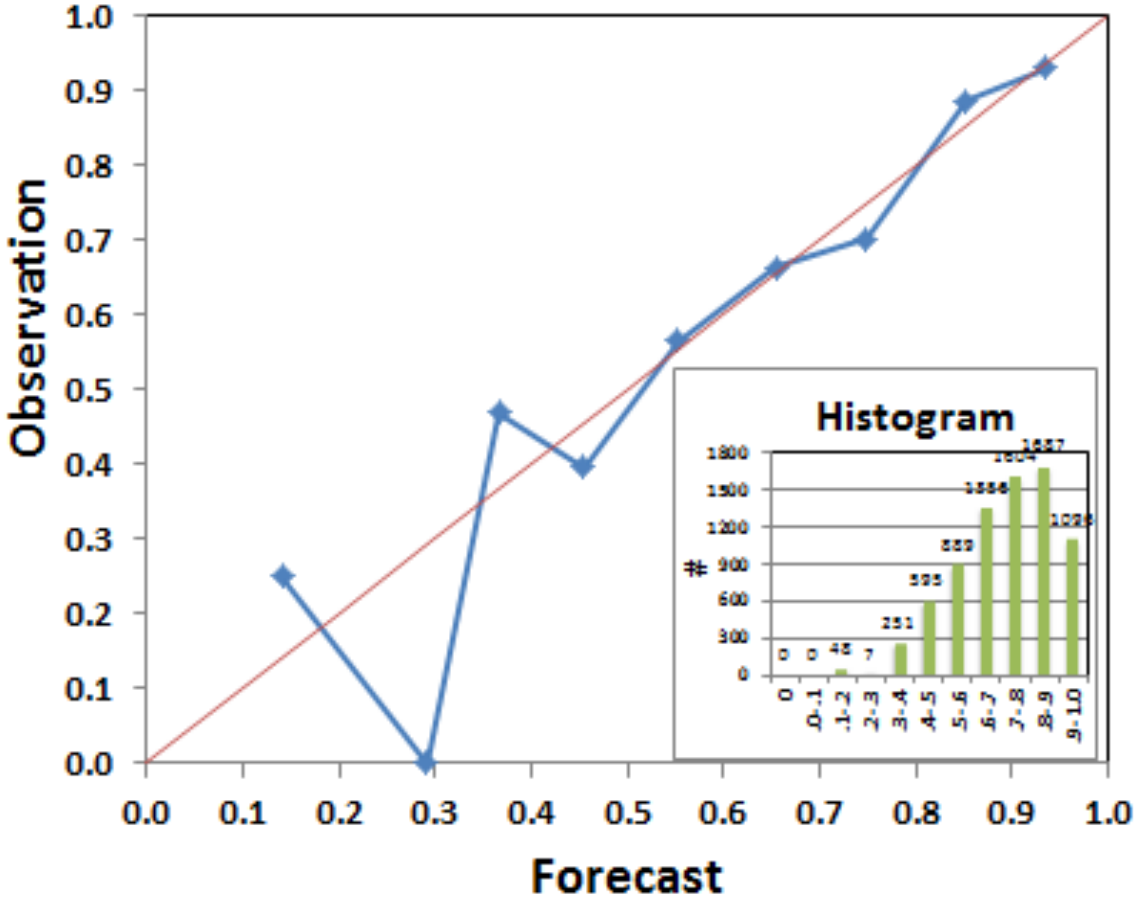
Rip current forecast model





http://polar.ncep.noaa.gov/nwps/viewer.shtml

Lifeguard observations for model validation



Rip current model limitations

- Observations for validation and calibration are limited
- No inclusion of surf zone bathymetry

Rip identification from web cams

Imagery for rip current identification

Simple approach

- Identify rip currents in time average imagery

Complex approach

- Particle Image Velocimetry (PIV) to observe flow magnitude

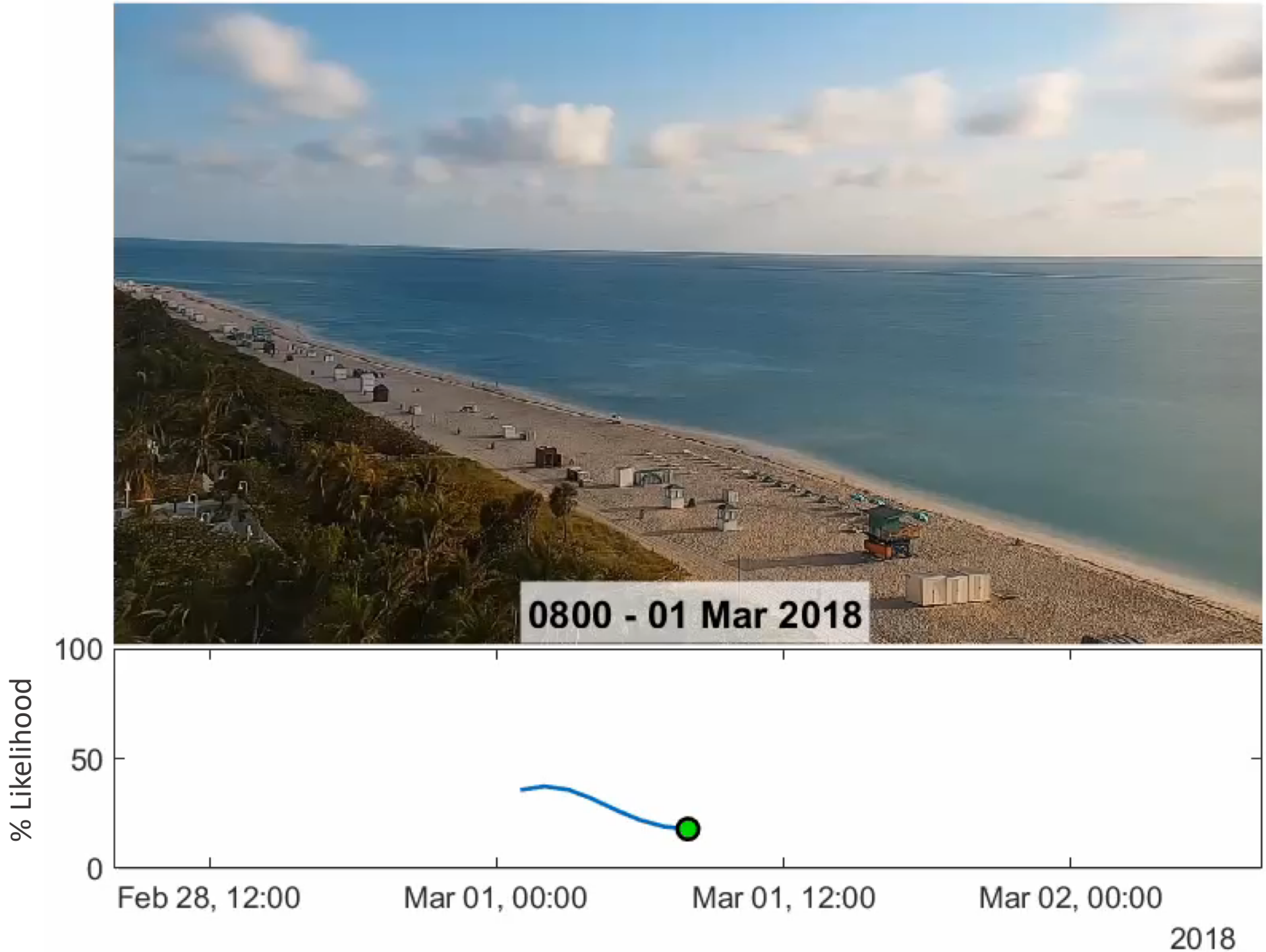
Imagery for surf zone bathymetry model inputs

Simple approach

- Qualitative estimates of bar uniformity from average imagery

Complex approach

- Use cBathy for quantitative estimates of surf zone bathymetry


0800 - 01 Mar 2018
100
50
0
% Likelihood
Feb 28, 12:00
Mar 01, 00:00
Mar 01, 12:00
Mar 02, 00:00
2018

Next steps

- Continue to explore Webcat imagery
- Compare Miami imagery data to lifeguard observations
- Collaborating on proposal to develop potential rip current forecast applications