SEACAST OVERVIEW

Visual displays of ocean forecasting

Designed for fishermen

Built by EECS students in collaboration with CEAOS
WHAT IT’S BUILT ON

Django Web Framework
Apache
Python
JavaScript and HTML
MySQL
CentOS
Purpose – The purpose of Seacast is to provide Oregon fishermen with a tool to view visualizations of ocean forecast data through an intuitive and easy to use interface

Goals-
Expand the feature set of Seacast
Improve reliability of the Seacast website
Maintain Seacast
WIND FIELDS

• One of the most highly requested features by fishermen
• Uses the North American Mesoscale (NAMS) model
• Winds were previously attempted using dynamic vectors
• Consulting with the fishermen that use the system led us to use barbs
• Processing time to plot winds has been reduced from 21 minutes per time index to 6.5 minutes
TIDES

- Tides allow fishermen to view tide predictions without leaving Seacast
- Tides evolved over the course of development
- Seacast stores annual tide tables locally
- Easily expanded to new locations
- Positions Seacast closer to a one stop shop
- Utilizes Google Map Markers

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**South Beach Tides**

Valid for **Nov. 7 2016**

<table>
<thead>
<tr>
<th>Time</th>
<th>Feet</th>
<th>Cm</th>
<th>High/Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>05:53 AM</td>
<td>6.7</td>
<td>204</td>
<td>H</td>
</tr>
<tr>
<td>11:21 AM</td>
<td>4.0</td>
<td>122</td>
<td>L</td>
</tr>
<tr>
<td>05:02 PM</td>
<td>6.7</td>
<td>204</td>
<td>H</td>
</tr>
<tr>
<td>11:49 PM</td>
<td>1.2</td>
<td>37</td>
<td>L</td>
</tr>
</tbody>
</table>
SEACAST RELIABILITY

- Seacast migrated to brand new machines
- Production and Staging now on identical hardware
- Structure of Seacast modified to facilitate unexpected loss of models
WAVE PERIOD

- Wave period was initially represented as a color map.
- Discussions with fishermen revealed they would prefer a simple integer representation of the average wave period.
- New display method eliminates redundant information.
OTHER IMPROVEMENTS

Automated development plotting
Previously teams did all the plotting manually step by step
Quality of life scripts
File cleanup
Database access
RESULTS

Seacast development met all of its primary goals.

Expanded features including the highly requested wind field are stable and functioning as expected.

Seacast has shown itself to be much more tolerant to model failure.
LOOKING TO THE FUTURE

Seacast development will continue with a new team

Some of the goals include adding Salinity and Bathymetry fields, lat-long specific forecast information, and a system health checker

Experimentation with new field displays