



The CoastWatch Data Analysis Tool

Peter Hollemans
SES Inc. Contractor for NOAA/NESDIS
October, 2003

CoastWatch Data Analysis Tool

Overview

Target User
Groups

☒ Target User Groups

Functionality

☒ Functionality

Future Work

☒ Future Work

CoastWatch Data Analysis Tool

Researchers

Target User
Groups

Functionality

Future Work

- ⊠ Oceanographic:
 - SST fronts and regimes
 - Algal blooms
- ⊠ Land:
 - Vegetation
 - Snow and ice
 - Fires
- ⊠ Atmospheric:
 - Hurricanes and storms
 - Volcanic eruptions

CoastWatch Data Analysis Tool

Casual Users

Target User
Groups

Functionality

Future Work

- ⊞ Fishing:
 - Charter boats
 - Commercial

- ⊞ Weather:
 - Education
 - Hobbyist

CoastWatch Data Analysis Tool

Operational Users

Target User
Groups

Functionality

Future Work

- ⊠ SST product validation
- ⊠ Cloud mask validation
- ⊠ Navigation accuracy check
- ⊠ Presentation graphics

CoastWatch Data Analysis Tool

Import and Export

Target User
Groups

Functionality

Future Work

- ✦ Reads CoastWatch HDF, HDF-EOS grid, CoastWatch IMGMAP (.cwf)
- ✦ Writes binary, text, ArcGIS
- ✦ Renders to JPEG, PNG, PDF

CoastWatch Data Analysis Tool

Display Annotation

Target User
Groups

Functionality

Future Work

- ✦ Color enhanced sensor data
- ✦ False color composites
- ✦ Zooming and panning
- ✦ Overlay of coast lines, grid lines, land mask, cloud mask

CoastWatch Data Analysis Tool

Statistics and Metadata

Target User
Groups

Functionality

Future Work

- ✦ Survey plots using point, line, and box
- ✦ Global metadata
- ✦ Variable metadata
- ✦ Geographic extents

CoastWatch Data Analysis Tool

Convenience Features

Target User
Groups

Functionality

Future Work

- ✦ Multiple workspaces, one for each open file
- ✦ Preferences for:
 - Initial data enhancement range
 - Color palette
 - Date and time formatting

CoastWatch Data Analysis Tool

Demonstration

Target User
Groups

Functionality

Future Work

✦ SST front survey

✦ Cloud masking

✦ Forest fire visualization

✦ Hurricane tracking

CoastWatch Data Analysis Tool

Code Migration

Target User
Groups

Functionality

Future Work

- ✦ Integration with the CoastWatch utilities
- ✦ All supported platforms will develop in sync
- ✦ Leverage functionality from the utilities

CoastWatch Data Analysis Tool

Planned Features

Target User
Groups

Functionality

Future Work

- ⊞ Generic data annotation with lines and symbols
- ⊞ Dynamic land masking based on GSHHS coastline data
- ⊞ Swath data support
- ⊞ User-defined vector graphics overlays

CoastWatch Data Analysis Tool

Summary

Target User
Groups

Functionality

Future Work

Target User Groups:

- Researchers
- Casual users
- Operation users

Functionality:

- Import and export
- Display and annotation
- Statistics and metadata
- Demonstration

Future Work:

- Integration with utilities
- New features

CoastWatch Data Analysis Tool

Acknowledgements

Target User
Groups

Functionality

Future Work

- ✦ Requirements, testing, improvements:
 - John Sapper
 - Xiaofeng Li
 - Tom Leming
 - Many other users
- ✦ User questions:
 - Mike Soracco
- ✦ Project management:
 - Ramesh Sinha