The CoastWatch Utilities Version 3

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CoastWatch Utilities Version 3

Overview

Utility Requirements

Utility Implementation

Future Work

- Utility Requirements
- Utility Implementation
- Future Work

CoastWatch Utilities Version 3

Website

- Utility Requirements
- Utility Implementation
- Future Work

- Rendering of data preview plots for web browser display
- Metadata printing
- Conversion from storage data format to desired data format

CoastWatch Utilities Version 3

Research

- Utility Requirements
- Utility Implementation
- Future Work

- Download data of interest
- Manual navigation correction
- Multitemporal and multispatial data compositing
- Product remapping
- Data conversion and rendering

CoastWatch Utilities Version 3

Product Development

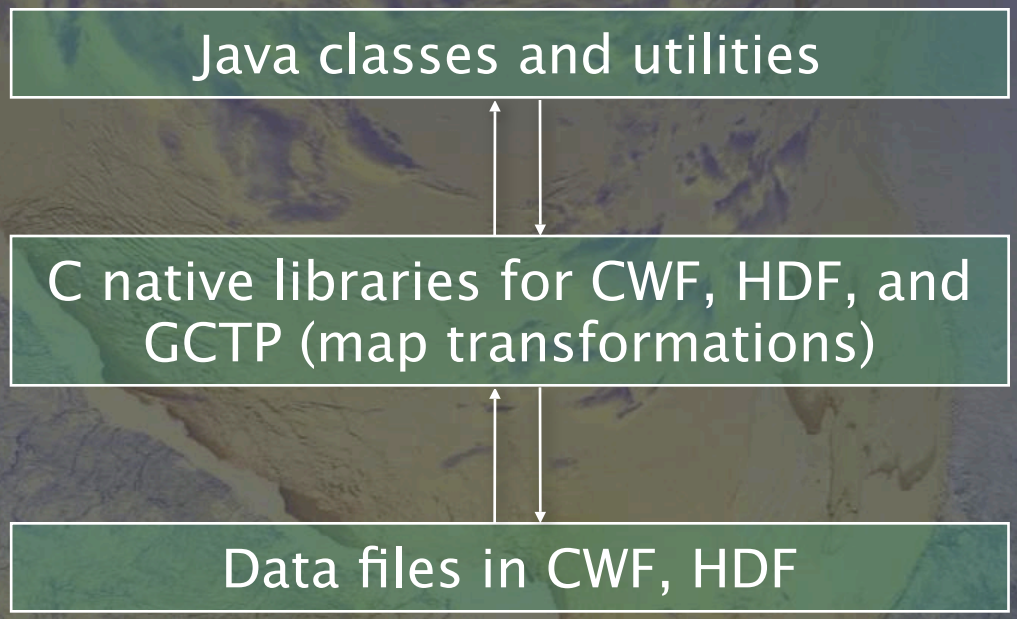
- Utility Requirements
- Utility Implementation
- Future Work

- Data product generation
- Buoy matchup sampling
- Pass browse image rendering
- Metadata access
- Navigation and cloud mask check
- Operational monitoring

CoastWatch Utilities Version 3

Software Architecture

- Utility Requirements
- Utility Implementation
- Future Work



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Rendering

Utility Requirements

Utility Implementation

Future Work

- cwrender:
  - Converts data to a color image format
  - Supports:
    - PNG (default): 24-bit color lossless compression
    - JPEG: 24-bit color lossy compression
    - GeoTIFF: 24 or 8-bit color uncompressed
    - PDF: 24-bit lossless compression, high quality fonts and lines

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Rendering (cont …)

Utility Requirements

Utility Implementation

Future Work

- Customizable data mapping: color enhancement, false color composite
- Customizable view: center point, magnification, image size
- Customizable overlays: coast lines, grid lines, land mask, cloud mask

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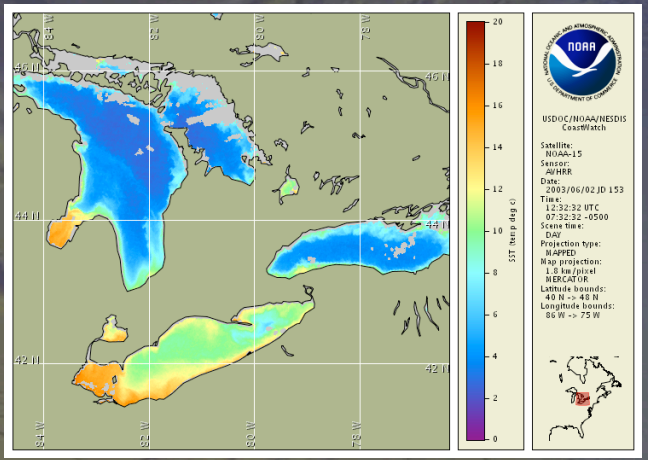
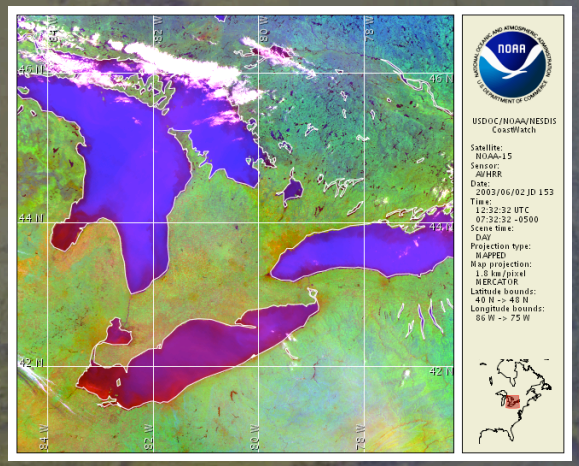
Rendering (cont …)

- Utility Requirements
- Utility Implementation
- Future Work

Color enhancement



False color composite



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Utility Requirements

Utility Implementation

Future Work

Information

- cwinfo:
  - Date and time
  - Satellite and sensor
  - Projection parameters
  - Variables
- cwsample:
  - Data sampling based on discrete Earth locations
- cwstats:
  - Min, max, mean, standard deviation
  - Customizable data density

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Format Conversion

Utility Requirements

Utility Implementation

Future Work

- cwimport:
  - Reads TeraScan HDF, CoastWatch HDF, CWF, NOAA1b
  - Creates CoastWatch HDF
- cwexport:
  - Reads CoastWatch HDF
  - Creates binary, text, ArcGIS

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Data Manipulation

Utility Requirements

Utility Implementation

Future Work

- For product remapping:
  - cwmaster (GUI)
  - cwregister
  - cwgraphics
- For creating new data:
  - cwcomposite
  - cwmath
  - cwangles
- For correction:
  - cwnavigate

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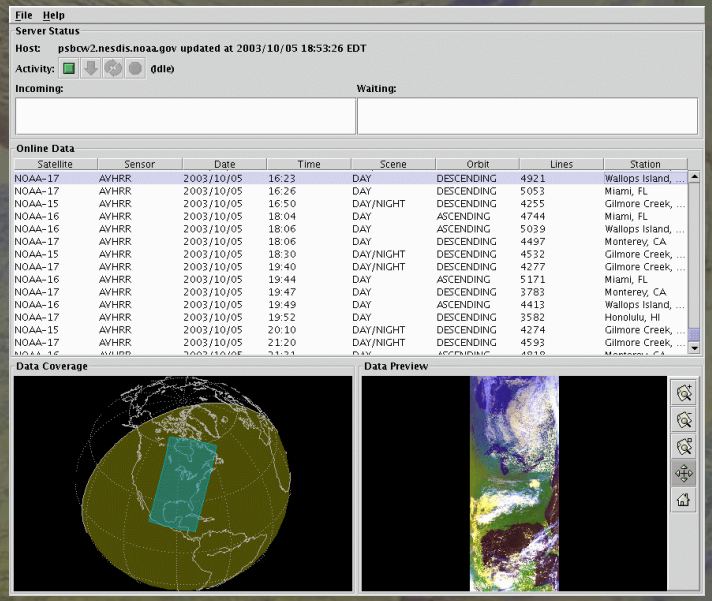
Network Access

Utility Requirements

Utility Implementation

Future Work

- cwdownload:
  - Retrieves data for specified regions
  - Customizable scene time, data age, satellite
- cwstatus:



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Utility Requirements

Utility Implementation

Future Work

Availability

- Available at: http://turf.nesdis.noaa.gov/cwf
- Operating systems: Windows, Linux, MacOS X, Solaris
- Requires Java Runtime Environment (JRE) 1.4 and up
- Update notices are emailed to interested users

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New Features

Utility Requirements

Utility Implementation

Future Work

- Support for more operating systems
- Support for more import formats, including XML based user-defined formats
- Integration with the CoastWatch Data Analysis Tool

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Documentation

Utility Requirements

Utility Implementation

Future Work

- Continuation of Java code and tool documentation
- Tutorial on common CoastWatch data processing tasks
- User guide for CDAT

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Summary

Utility Requirements

Utility Implementation

Future Work

- Utility Requirements:
  - Web site
  - Research
  - Product development
- Utility Implementation:
  - Software architecture: Java/C
  - Tool groups: rendering, info, conversion, manipulation, network
  - Available for Windows, Linux, MacOS X, Solaris
- Future Work:
  - New formats
  - Integration with CDAT
  - More documentation

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Utility Requirements

Utility Implementation

Future Work

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- Requirements and testing:
  - John Sapper
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