



Spatial statistics for EU directives reporting on coastal areas

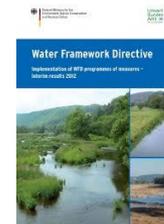
Copernicus for Coastal Zone Management



Marine
Monitoring

European Directives on coastal areas

- ✓ Water Framework Directive (WFD)
- ✓ Marine Strategy Framework Directive (MSFD)
- ✓ Recommendation on Integrated Coastal Zone Management†
- ✓ Bathing Water, Habitats (Natura2000), ...



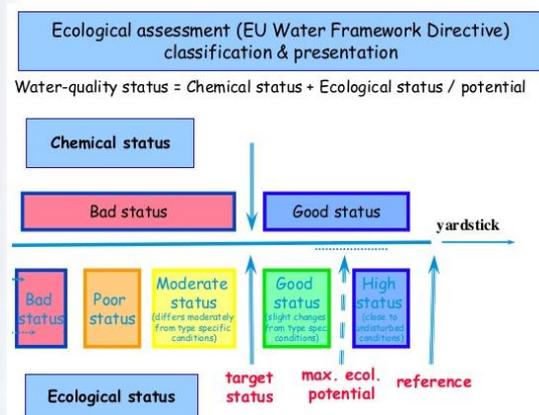
WFD: Good Status for all EU surface and ground waters by 2015. 2027 final deadline for meeting objectives

MSFD: Good Environmental Status (GES) of EU marine waters by 2020



Initial assessment and following regular monitoring of:

- set of environmental indicators to evaluate ecological status (WFD)
- 11 status descriptors on marine waters up to 12 n.m. (MSFD)



1. Biological diversity
 2. Non-indigenous species
 3. Commercially exploited species
 4. Marine food webs
 5. Eutrophication
 6. Sea-floor integrity
 7. Hydrographical conditions
 8. Contaminants
 9. Health issues
 10. Marine litter
 11. Marine energy
- MSD status descriptors



MSFD implementation into Member States laws ->

- Appointing of a national referent
- Definition of a national monitoring strategy
- Bodies responsible for performing at sea monitoring

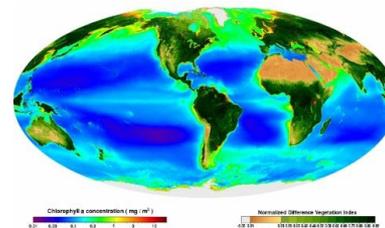
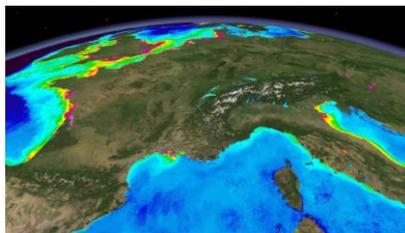
Representative example: Italian implementation

- National referent/coordination: Environment Ministry
- EU reporting and scientific guidance: ISPRA (National Institute for Environmental Protection and Research)
- ISPRA defined practices and parameters to be measured
- Monitoring mainly by regional bodies: ARPA (Regional Agency for the Environmental Prevention and Protection)



20 years of water quality measurements from Earth Observation (EO):

- ❖ Large area coverage
- ❖ High temporal frequency
- ❖ Constantly advances in methods and technology (→ Sentinel-3)
- ❖ Scientific community recognizes its value for complementing in situ measurements

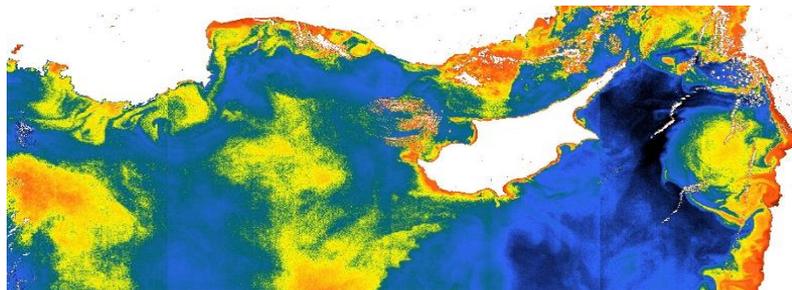




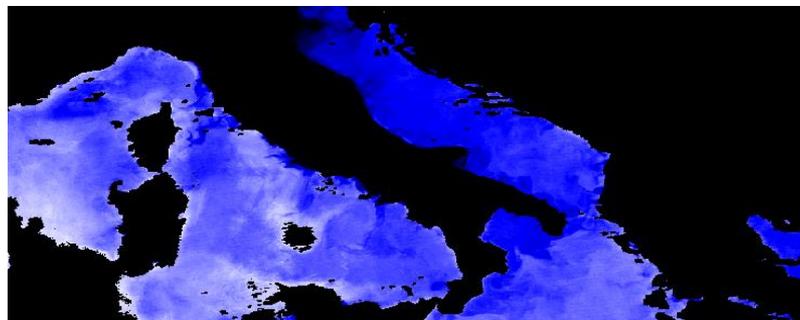
Marine
Monitoring

Estimation of eutrophication: useful data

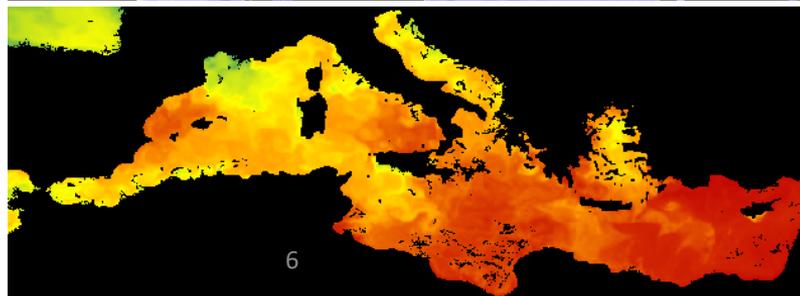
Chlorophyll-a concentration



Water transparency



Sea surface temperature





2016: implementation MSFD monitoring programs

- ✓ Traditional in situ measurements: gaps
- ✓ Increasing awareness on the value of EO data: long time series and new sensors (Sentinel-3)
- ✓ Evaluation of descriptors using above information: statistical synthesis on representative sea areas → Reporting
- ✓ Technical tables between Member States over the same sea basin to agree:
 - Statistical figures to be considered
 - A definition of homogeneous areas for each descriptor with no discontinuity across Member States borders





Long time series of EO derived water quality parameters maps allow to:

- ✓ **Identify homogeneous areas**

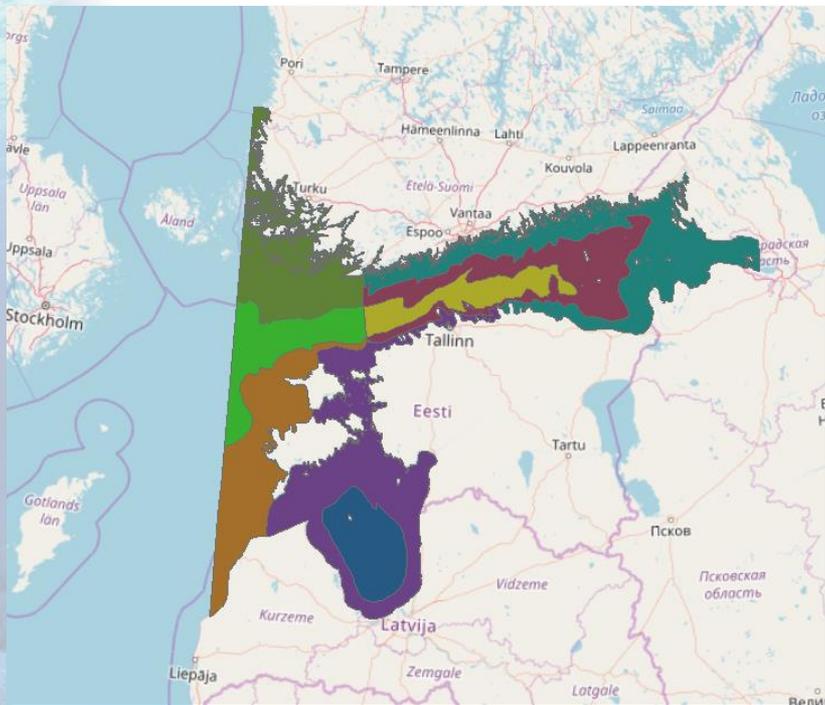
For example the trophic characteristics of an area can be estimated by combining chlorophyll, water transparency and other measurements (salinity, temperature, etc.)

- ✓ **Perform continuous monitoring on such areas**

Obtaining statistics which can be directly used for the reporting



Zoning of Irish seas



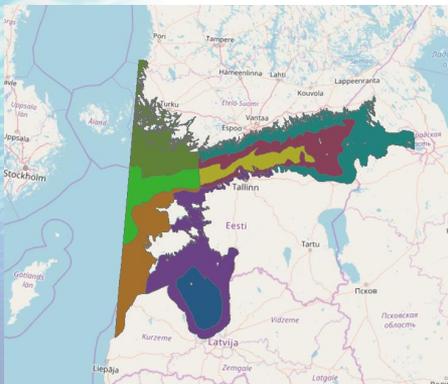
Example of a possible zoning of the east part of Baltic sea using the bathymetry.



Marine
Monitoring

D E M O

DEMO



Use of CMEMS and MarCoast monthly maps over the Gulf of Finland for extracting statistics on the various zones over a period of one year, as required for the reporting of MSFD.

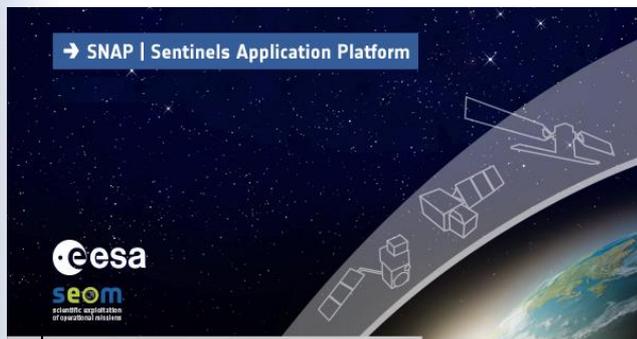
CMEMS products: Baltic sea Monthly means of Surface Chlorophyll Concentration from Satellite observations and monthly water transparency

Period considered: In the demo only the month of September 2017 is considered

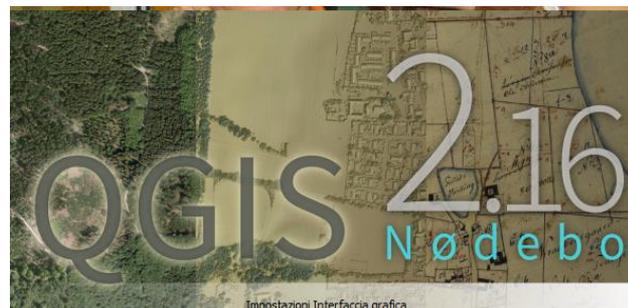


Software used:

ESA -SNAP



QGIS





Product Explorer x Pixel Info

SNAP - Open Product

Look in: CMEMS

- dataset-oc-med-chl-modis_a-l4-chl_1km_monthly-rt-v01_2013-11-01.nc
- dataset-oc-med-chl-modis_a-l4-chl_1km_monthly-rt-v01_2013-12-01.nc
- dataset-oc-med-chl-modis_a-l4-chl_1km_monthly-rt-v01_2014-01-01.nc
- dataset-oc-med-chl-modis_a-l4-chl_1km_monthly-rt-v01_2014-02-01.nc
- dataset-oc-med-chl-modis_a-l4-chl_1km_monthly-rt-v01_2014-03-01.nc
- dataset-oc-med-chl-modis_a-l4-chl_1km_monthly-rt-v01_2014-04-01.nc
- dataset-oc-med-chl-modis_a-l4-chl_1km_monthly-rt-v01_2014-05-01.nc
- dataset-oc-med-chl-modis_a-l4-chl_1km_monthly-rt-v01_2014-06-01.nc
- dataset-oc-med-chl-modis_a-l4-chl_1km_monthly-rt-v01_2014-07-01.nc
- dataset-oc-med-chl-modis_a-l4-chl_1km_monthly-rt-v01_2014-08-01.nc
- dataset-oc-med-chl-modis_a-l4-chl_1km_monthly-rt-v01_2014-09-01.nc
- dataset-oc-med-chl-modis_a-l4-chl_1km_monthly-rt-v01_2014-10-01.nc
- dataset-oc-med-chl-modis_a-l4-chl_1km_monthly-rt-v01_2014-11-01.nc

File name:

Files of type: All Files

Open Cancel

Navigation World View Colour ... x Uncertai...

This tool window is used to manipulate the **colouring of images** shown in an image view. Right now, there is no selected image view.

SNAP - Multiple Readers Available

Multiple readers are available for the selected file. The readers might interpret the data differently. Please select one of the following:

Generic NetCDF Data Product

Remember my decision and don't ask again.

OK Cancel

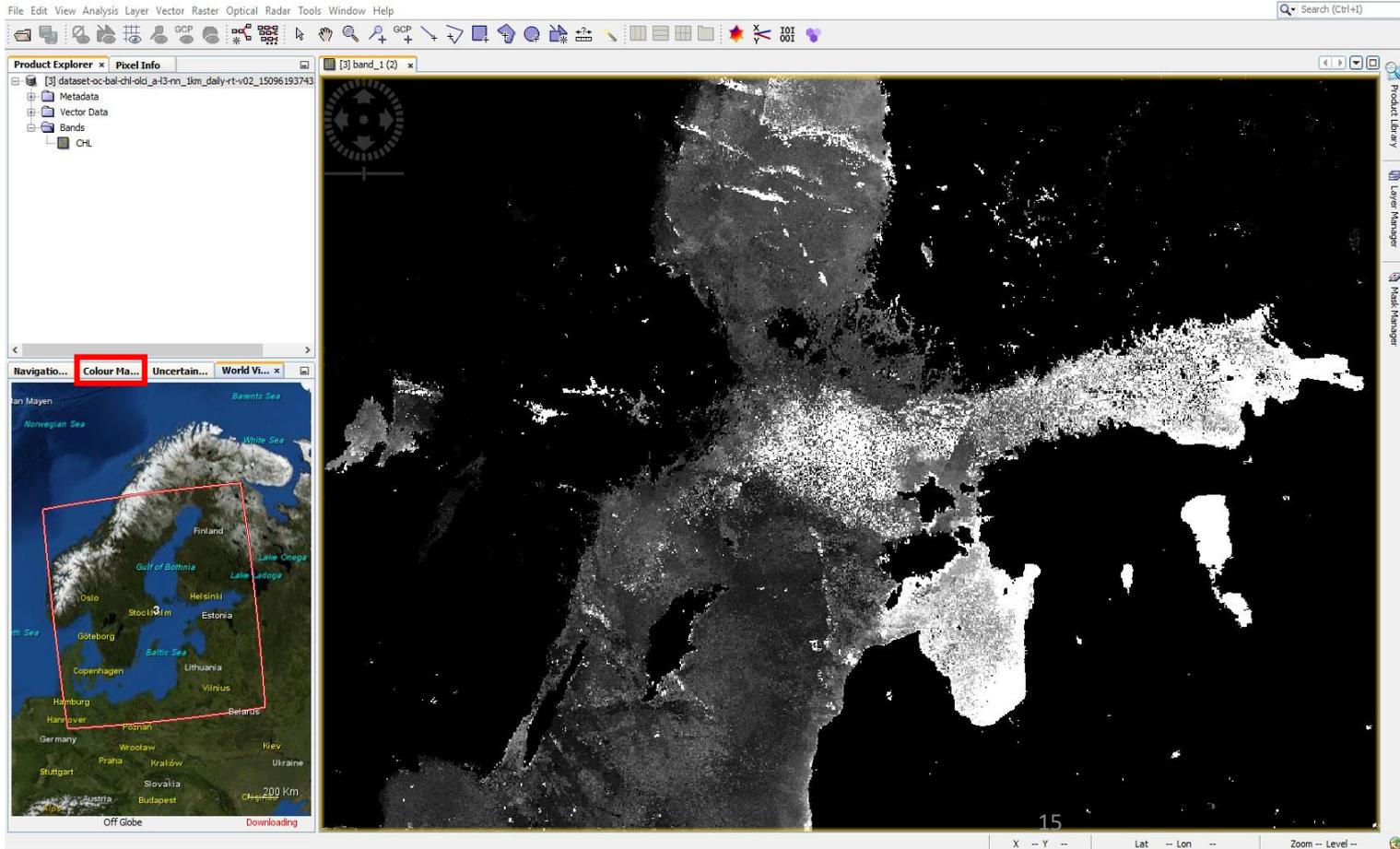


The screenshot displays the SNAP (Scientific Data Processing) software interface. The main window is titled 'SNAP' and features a menu bar with 'File', 'Edit', 'View', 'Analysis', 'Layer', 'Vector', 'Raster', 'Optical', 'Radar', 'Tools', 'Window', and 'Help'. Below the menu bar is a toolbar with various icons for file operations, navigation, and analysis. The 'Product Explorer' panel on the left shows a tree view of the dataset structure:

- dataset-oc-med-chl-mods_a44-chl_1km_monthly-rt-v01_201
- Metadata
- Vector Data
- chl** (highlighted with a red box)
- Mediterranean Sea Monthly Chlorophyll Case 1 and Case 2 Concentration, 857 x 988 pixels, (milligram m⁻³)
- chl_error

The 'Pixel Info' panel is also visible, showing details for the selected 'chl' layer. The main workspace is currently empty. On the right side, there are three vertical panels: 'Product Library', 'Task Manager', and 'Layer Manager'. At the bottom, there is a navigation bar with tabs for 'Navigation', 'World View', 'Colour ...', and 'Uncertal...'. A status bar at the very bottom shows coordinates (X, Y, Lat, Lon) and zoom level information.

This tool window is used to manipulate the **colouring of images** shown in an image view.
Right now, there is no selected image view.





File Edit View Analysis Layer Vector Raster Optical Radar Tools Window Help

Search (Ctrl+F)

Product Explorer x Pixel Info

- [3] dataset-oc-bal-chi-olci_a13-rn_1km_daily-rt-v02_15096193743
 - Metadata
 - Vector Data
 - Bands
 - CHI

[3] band_1 (2)

Product Library Layer Manager Map Manager

Navigation... Colour... Uncertain... World View

Editor: Basic Sliders Table

Colour ramp: unnamed

- unnamed
- S_colors
- Z_colors**
- ec_chi
- ec_general
- ec_top_quality
- ec_tam
- ec_yellowsubstance

More Options



File Edit View Analysis Layer Vector Raster Optical Radar Tools Window Help

Product Explorer x Pixel Info

- dataset-oc-bal-ch-olo_a13-rn_1km_daily-rt-v02_15096193743
 - Metadata
 - Vector Data
 - Bands
 - CHL

Navigation... Colour... Uncertain... World View

Editor: Basic Sliders Table

Colour ramp: derived from 7_colors

Display range

Min: -0.13064691 Max: 4.46185588

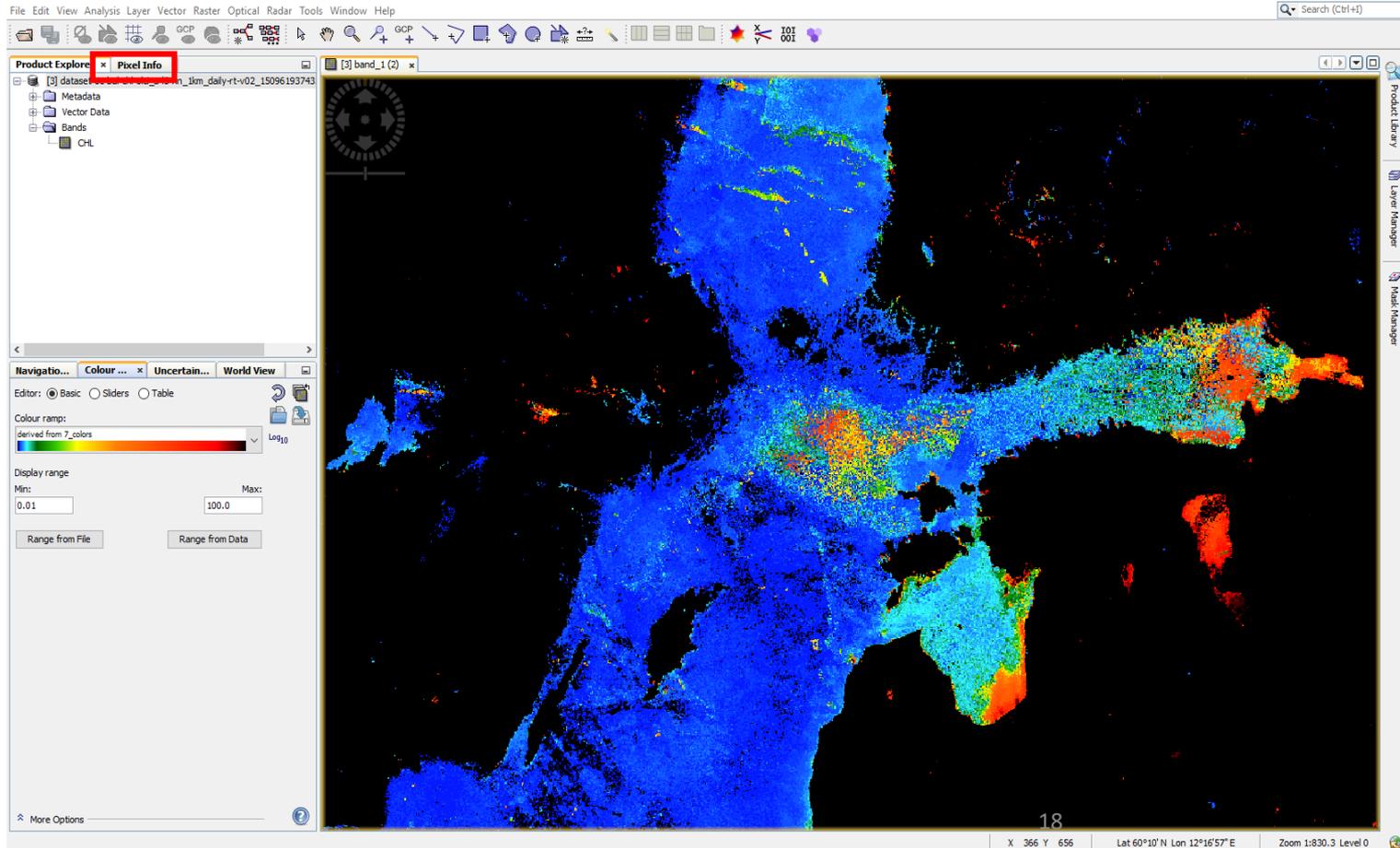
Range from File Range from Data

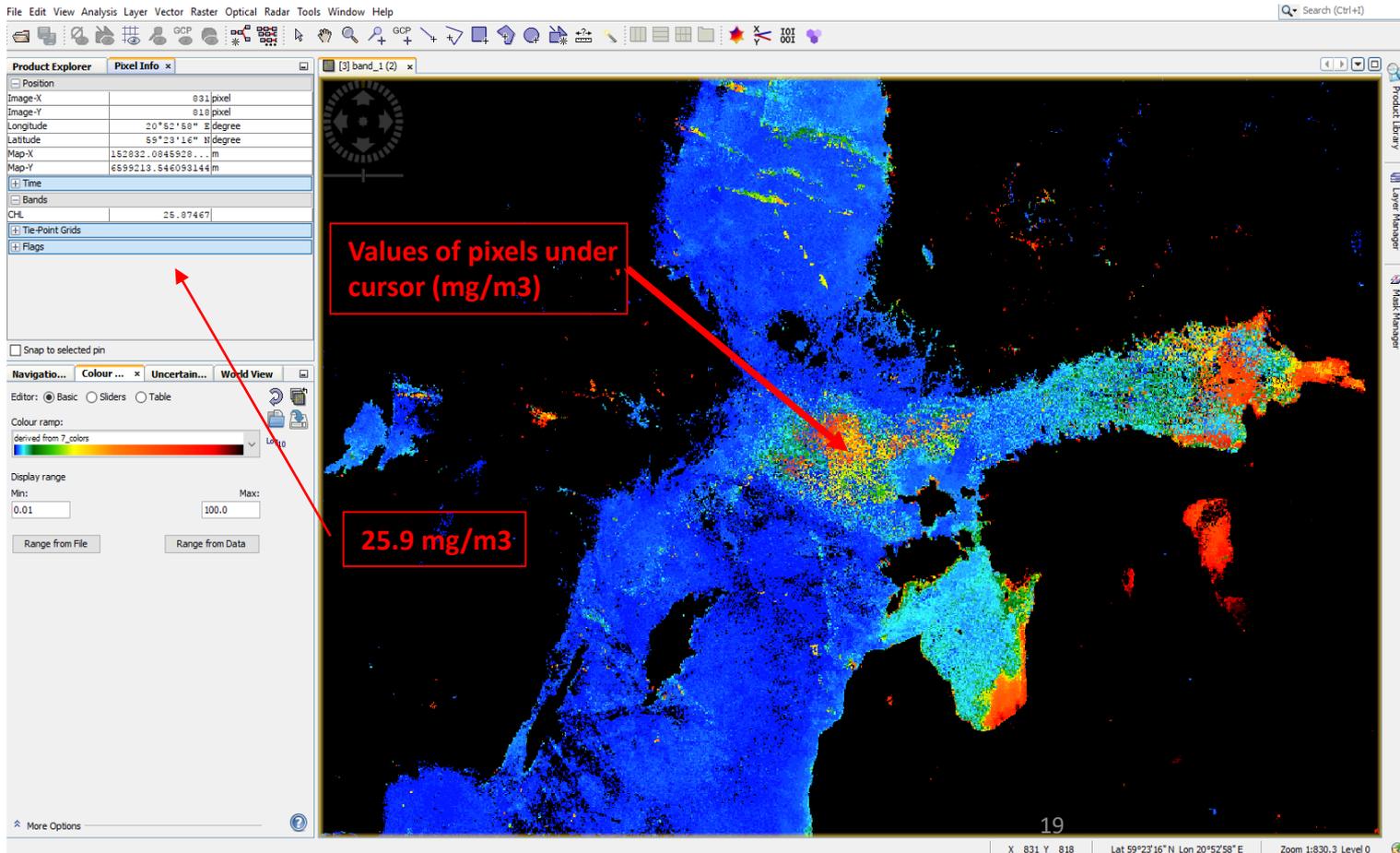
Set
Min: 0.01
Max: 100

17

X 393 Y 608 Lat 60°38'13"N Lon 12°33'58"E Zoom 1:830.3 Level 0

Next





Next



File Edit View Analysis Layer Vector Raster Optical Radar Tools Window Help

Search (Ctrl+F)

Product Explorer Pixel Info x [3] band_1 (2) x

Position	
Image-X	831 pixel
Image-Y	818 pixel
Longitude	20°52'58" E degree
Latitude	59°23'16" N degree
Map-X	162882.0845928... m
Map-Y	6599213.546093144 m
Time	
Bands	
CHL	25.87467
Tie-Point Grids	
Flags	

Snap to selected pin

Navigation... x Colour ... x Uncertain... World View

Editor: Basic Sliders Table

Colour ramp: derived from 7 colors Log10

Display range
Min: 0.01 Max: 100.0

More Options ?

Product Library Layer Manager Mark Manager

SNAP - Open Product

Look in: data

- dataset-oc-bal-chl-olci_a-l3-nn_1km_daily-rt-v02_1509613633603.nc
- dataset-oc-bal-opt-olci_a-l3-kd490_1km_daily-rt-v02_1509622828375.nc

Recent Items Desktop Documents This PC Network

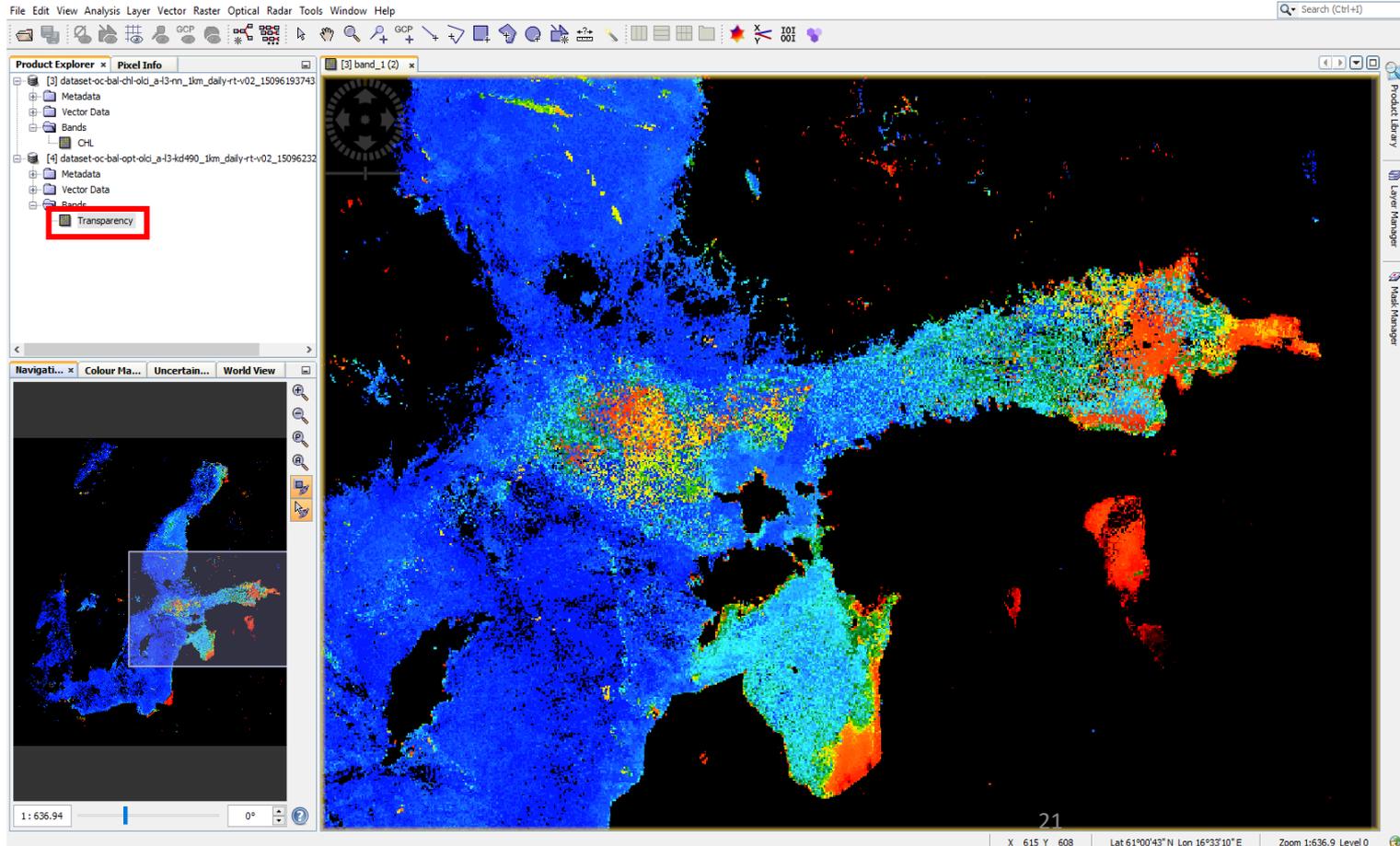
File name: dataset-oc-bal-opt-olci_a-l3-kd490_1km_daily-rt-v02_1509622828375.nc

Files of type: All Files

20

X 831 Y 818 Lat 59°23'16" N Lon 20°52'58" E Zoom 1:830.3 Level 0

European Commission





The screenshot displays a GIS application window with the following components:

- Menu Bar:** File, Edit, View, Analysis, Layer, Vector, Raster, Optical, Radar, Tools, Window, Help.
- Search Bar:** Search (Ctrl+F)
- Product Explorer:** A tree view on the left showing two datasets:
 - [3] dataset-oc-bal-ch-oli_a-13-rn_1km_daily-rt-v02_15096193743
 - Metadata
 - Vector Data
 - Bands
 - CHL
 - [4] dataset-oc-bal-opt-oli_a-13-kd490_1km_daily-rt-v02_15096232
 - Metadata
 - Vector Data
 - Bands
 - Transparency
- Main Map Area:** A large satellite image showing a coastal region with a dark sea and a bright, textured shoreline.
- Navigation Pane (Bottom Left):** Contains buttons for 'Navigati...', 'Colour Ma...' (highlighted with a red box), 'Uncertain...', and 'World View'. It also includes a zoom slider and a scale indicator.
- Status Bar (Bottom):** Displays coordinates (X 669 Y 691, Lat 60°21' N Lon 17°45' 12" E), zoom level (Zoom 1:612.0 Level 0), and a page number (22).



The screenshot displays a GIS application window with a menu bar (File, Edit, View, Analysis, Layer, Vector, Raster, Optical, Radar, Tools, Window, Help) and a search bar (Search (Ctrl+F)). The main workspace shows a map of Europe with a grayscale data overlay. On the left, the 'Product Explorer' panel lists two datasets: '[3] dataset-oc-bal-ch-old_a43-nn_1km_daily-rt-v02_15096193743' and '[4] dataset-oc-bal-opt-old_a43-kd490_1km_daily-rt-v02_15096232'. The 'Colour' panel is open, showing a 'Colour ramp' list with options: 'unnamed', 'subhelix_cycle', 'gradient_8_colors', 'gradient_black_to_red', 'gradient_blue' (highlighted with a red box), 'gradient_grey', 'gradient_red', and 'gradient_red_to_black'. The 'gradient_blue' option is selected. The bottom status bar shows '23' and 'X -- Y -- Lat -- Lon -- Zoom -- Level --'. The 'European Commission' logo is visible in the bottom right corner.



The screenshot shows a GIS application window with a menu bar (File, Edit, View, Analysis, Layer, Vector, Raster, Optical, Radar, Tools, Window, Help) and a toolbar. The main map area displays a satellite-style image with a blue color ramp applied. The left sidebar contains a 'Product Explorer' tree with folders for 'dataset-oc-bal-chi-olci_a43-nn_1km_daily-rt-v02_15096193743' and 'dataset-oc-bal-opt-olci_a43-kd490_1km_daily-rt-v02_15096232'. Below the explorer is a 'Navigation' panel with tabs for 'Colour...', 'Uncertain...', and 'World View'. The 'Colour...' tab is active, showing a 'Basic' editor with a 'Colour ramp' set to 'derived from gradient_blue'. The 'Display range' section shows 'Min: -0.42187973' and 'Max: 15.81516286'. Two red arrows point from a red-bordered text box to the 'Range from File' and 'Range from Data' buttons. The text box contains the text: **Set Min: 1 Max: 15**. The bottom status bar shows coordinates (X: 733 Y: 741, Lat: 59°58'51"N Lon: 19°00'38"E) and zoom level (Zoom: 1:612.0 Level: 0).

Next



File Edit View Analysis Layer Vector Raster Optical Radar Tools Window Help

Q Search (Ctrl+I)

Product Explorer **Pixel Info** [3] band_1 (2) x [4] Transparency x

- [3] dataset-oc-bal-opt-olo_a13-kd490_1km_daily-rt-v02_15096193743
 - Metadata
 - Vector Data
 - Bands
 - CHL
- [4] dataset-oc-bal-opt-olo_a13-kd490_1km_daily-rt-v02_15096232
 - Metadata
 - Vector Data
 - Bands
 - Transparency

Navigation... Colour... x Uncertain... World View

Editor: Basic Sliders Table

Colour ramp: derived from gradient_blue Log₁₀

Display range
Min: 0,0 Max: 15,0
Range from File Range from Data

25

X 783 Y 772 Lat 59°45'20" N Lon 19°57'30" E Zoom 1:612,0 Level 0

Product Library Layer Manager Map Manager



File Edit View Analysis Layer Vector Raster Optical Radar Tools Window Help

Q Search (Ctrl+I)

Product Explorer Pixel Info x [3] band_1 (2) x [4] Transparency x

Position	
Image-X	849 pixel
Image-Y	822 pixel
Longitude	21°11'12" E degree
Latitude	59°21'57" N degree
Map-X	1.69832.0845828... m
Map-Y	6595213.546093144 m
Time	
Bands	
Transparency	0.55966
Tie-Point Grids	
Flags	

Snap to selected pin

Navigation... Colour ... x Uncertain... World View

Editor: Basic Sliders Table

Colour ramp:
derived from gradient_blue

Display range
Min: 0.0 Max: 15.0

Product Library Layer Manager Map Manager

More Options ?

26

X 848 Y 822 Lat 59°21'57" N Lon 21°11'12" E Zoom 1:612.0 Level 0

Values of pixels
under cursor (m)

0.6 m

Next



File Edit View Analysis Layer Vector Raster Optical Radar Tools Window Help

Q Search (Ctrl+I)

Product Explorer Pixel Info x [3] band_1 (2) x [4] Transparency x

Position	
Image-X	840 pixel
Image-Y	822 pixel
Longitude	21°11'12" E degree
Latitude	59°21'57" N degree
Map-X	169832.0845820... m
Map-Y	6595213.546093144 m
Time	
Bands	
Transparency	0.55966
Tie-Point Grids	
Flags	

Snap to selected pin

Navigation... Colour ... x Uncertain... World View

Editor: Basic Sliders Table

Colour ramp:
derived from gradient_blue
Log₁₀

Display range
Min: 0.0 Max: 15.0

More Options ?

Product Library Layer Manager Map Manager

27

X 848 Y 822 Lat 59°21'57" N Lon 21°11'12" E Zoom 1:612.0 Level 0



File Edit View Analysis Layer Vector Raster Optical Radar Tools Window Help

Q Search (Ctrl+I)

Product Explorer Pixel Info x [3] band_1 (2) x [4] Transparency x

Position	
Image-X	620 pixel
Image-Y	871 pixel
Longitude	17°20'56" E degree
Latitude	58°41'36" N degree
Map-X	-68167.9154071... m
Map-Y	6546213.546093144 m
Time	
Bands	
Transparency	9.59101
Tie-Point Grids	
Flags	

Snap to selected pin

Navigation... Colour... x Uncertain... World View

Editor: Basic Sliders Table

Colour ramp:
derived from 7_colors

Display range
Min: 0.01 Max: 100.0

Product Library Layer Manager Map Manager

X -- Y -- Lat -- Lon -- Zoom -- Level --



File Edit View Analysis Layer Vector Raster Optical Radar Tools Window Help

Search (Ctrl+F)

Product Explorer Pixel Info x

Position	
Image-X	740 pixel
Image-Y	965 pixel
Longitude	19°40'47" E degree
Latitude	59°00'01" N degree
Map-X	67892.08459291945 m
Map-Y	6452213.546093144 m

Time

Bands

Transparency	19.00769
--------------	----------

Tie-Point Grids

Flags

Snap to selected pin

Navigati... x Colour Ma... Uncertain... World View

1 : 776.06 0°

[3] band_1 (2) x [4] Transparency x

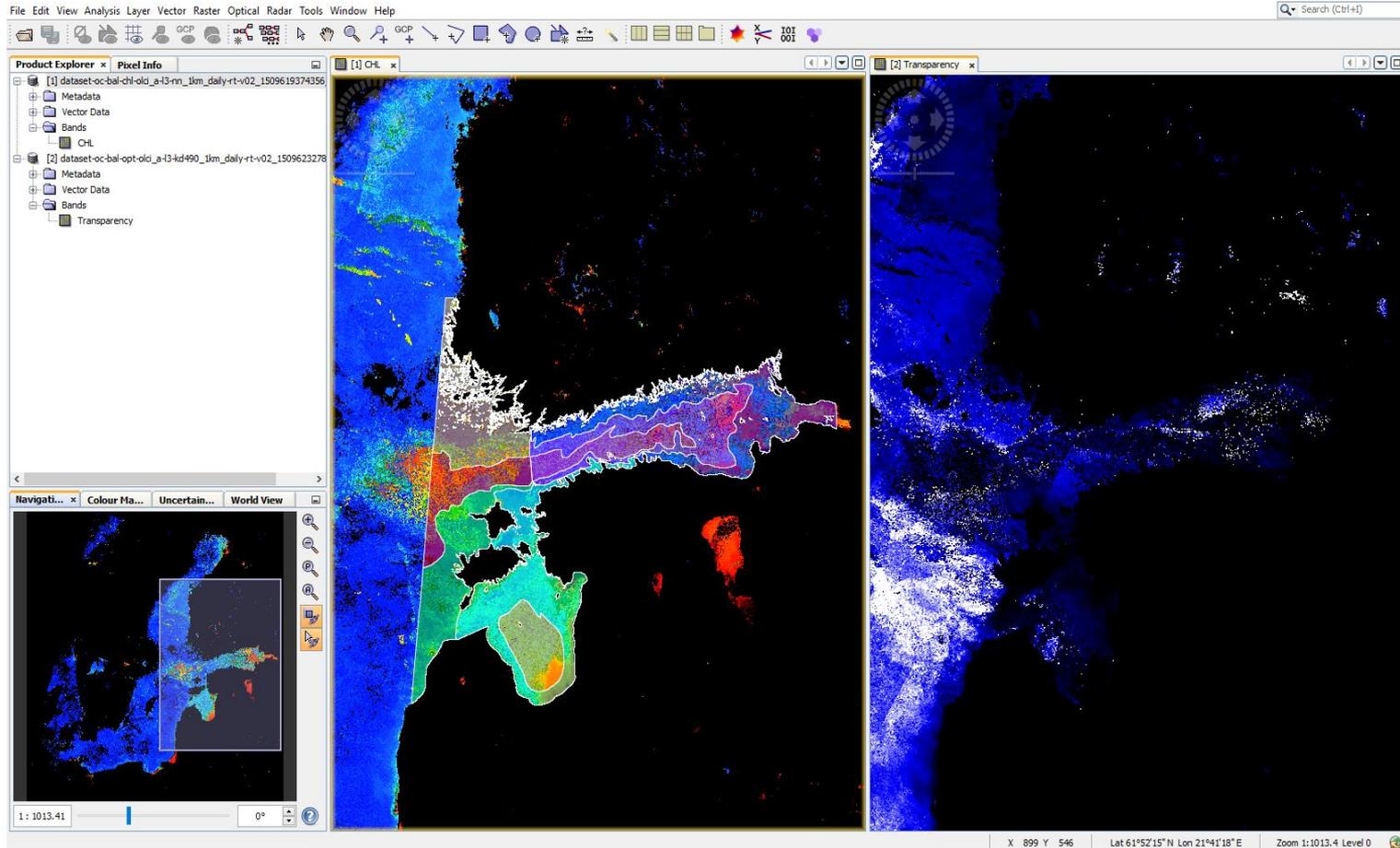
Product Library Layer Manager Map Manager

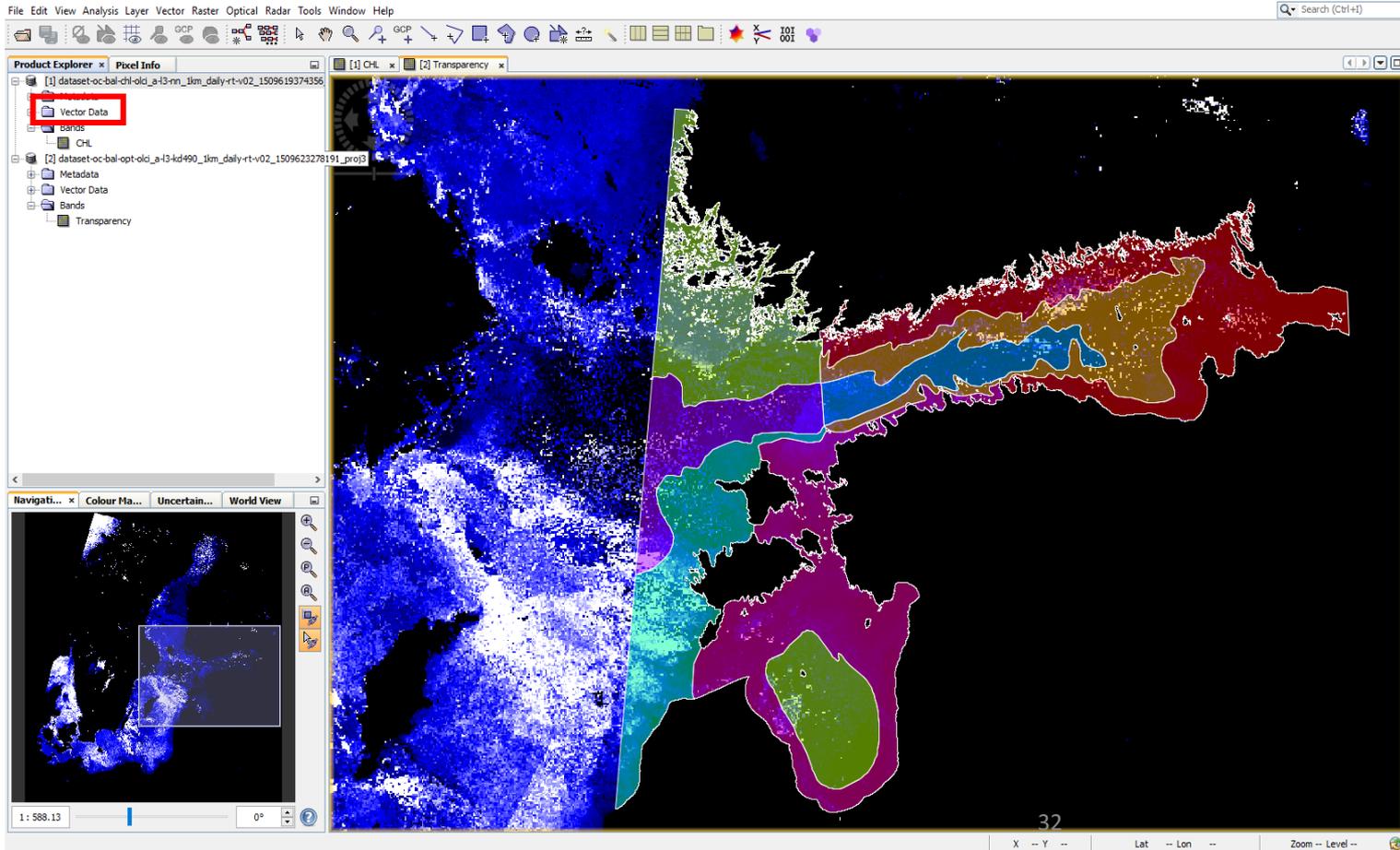
29

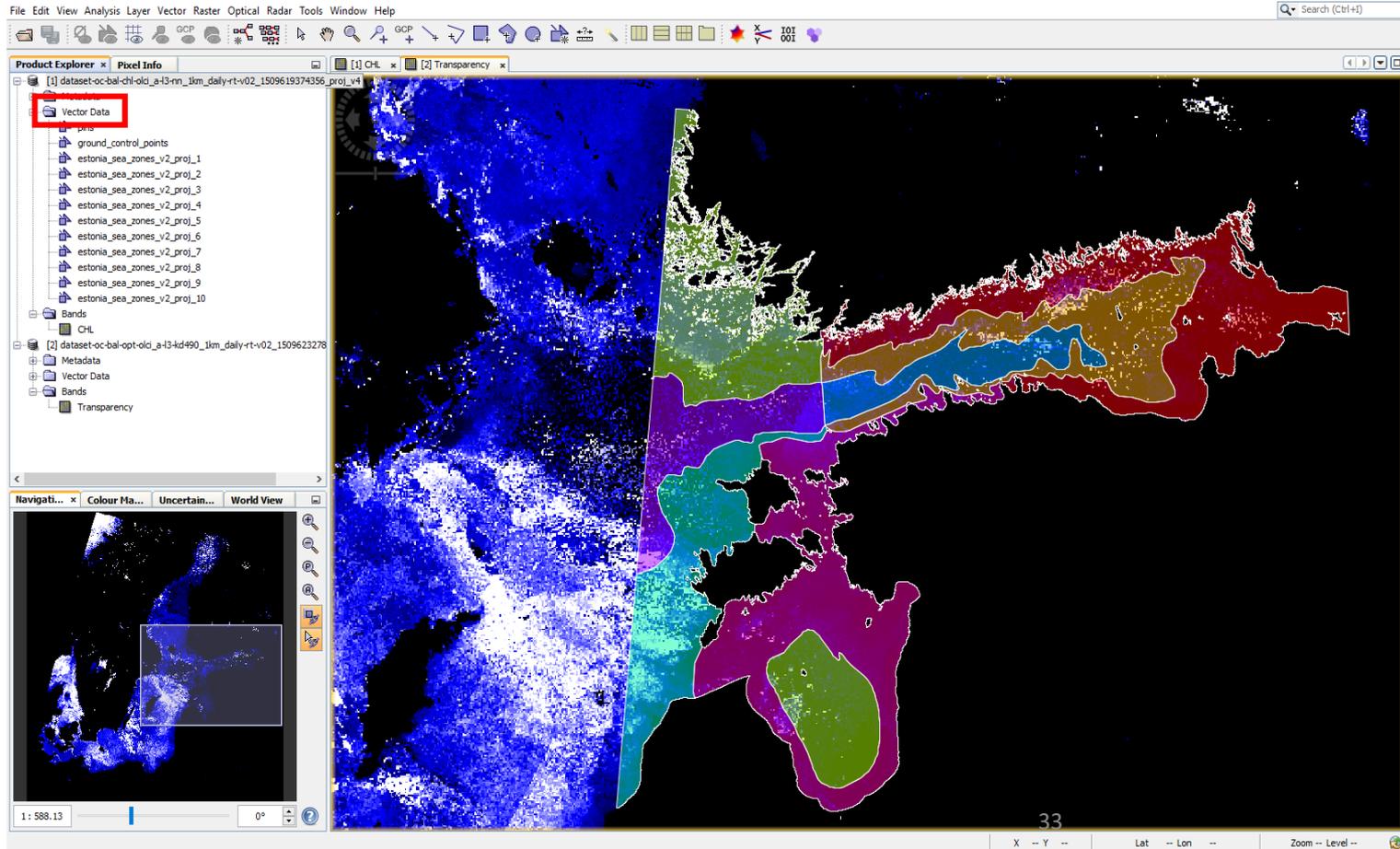
X -- Y -- Lat -- Lon -- Zoom -- Level --

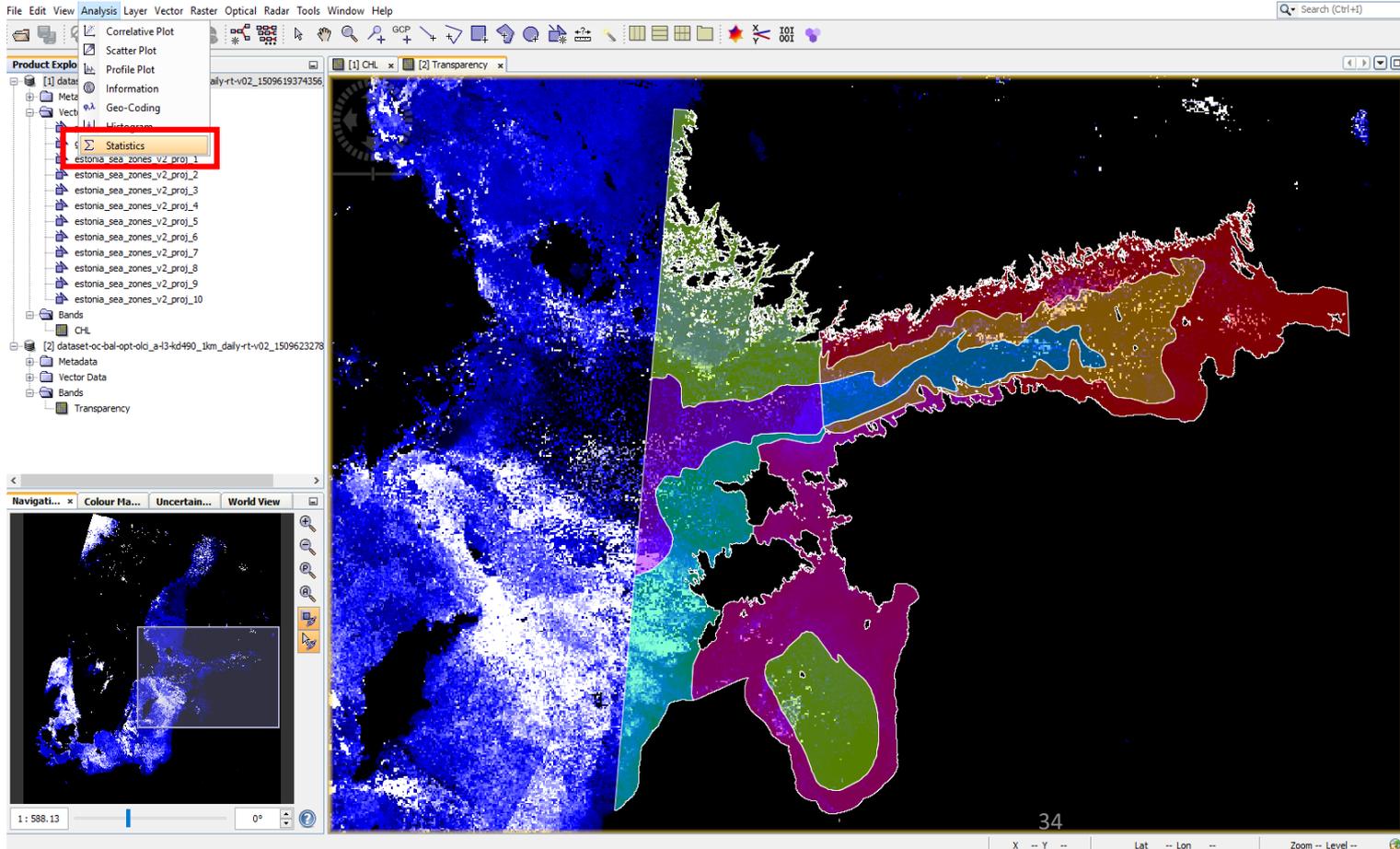


The screenshot displays a GIS application window with a menu bar (File, Edit, View, Analysis, Layer, Vector, Raster, Optical, Radar, Tools, Window, Help) and a toolbar. The main map area shows a satellite-style image with a color-coded overlay. A 'Product Library' panel is on the left, and a 'Navigation' panel is at the bottom left. The 'Import Shapefile' dialog box is open, showing the file 'Zones_TSI.shp' selected in the 'Look in: Zones' folder. The 'File name' field contains 'Zones_TSI.shp' and the 'Files of type' is set to 'ESRI Shapefiles (*.shp)'. The 'Open' button is highlighted with a red box. Below it, the 'Import Geometry' dialog box is open, asking: 'The vector data set contains 10 polygonal shapes. Shall they be imported separately?'. It provides instructions: 'If you select Yes, the polygons can be used as individual masks and they will be displayed on individual layers.' The 'Attribute for mask/layer naming' is set to 'terra'. The 'Yes' button is highlighted with a red box. The status bar at the bottom shows '1 : 776.06', '0°', and '30'.











Statistics x

No statistics computed yet.

Use ROI mask(s):

Filter:

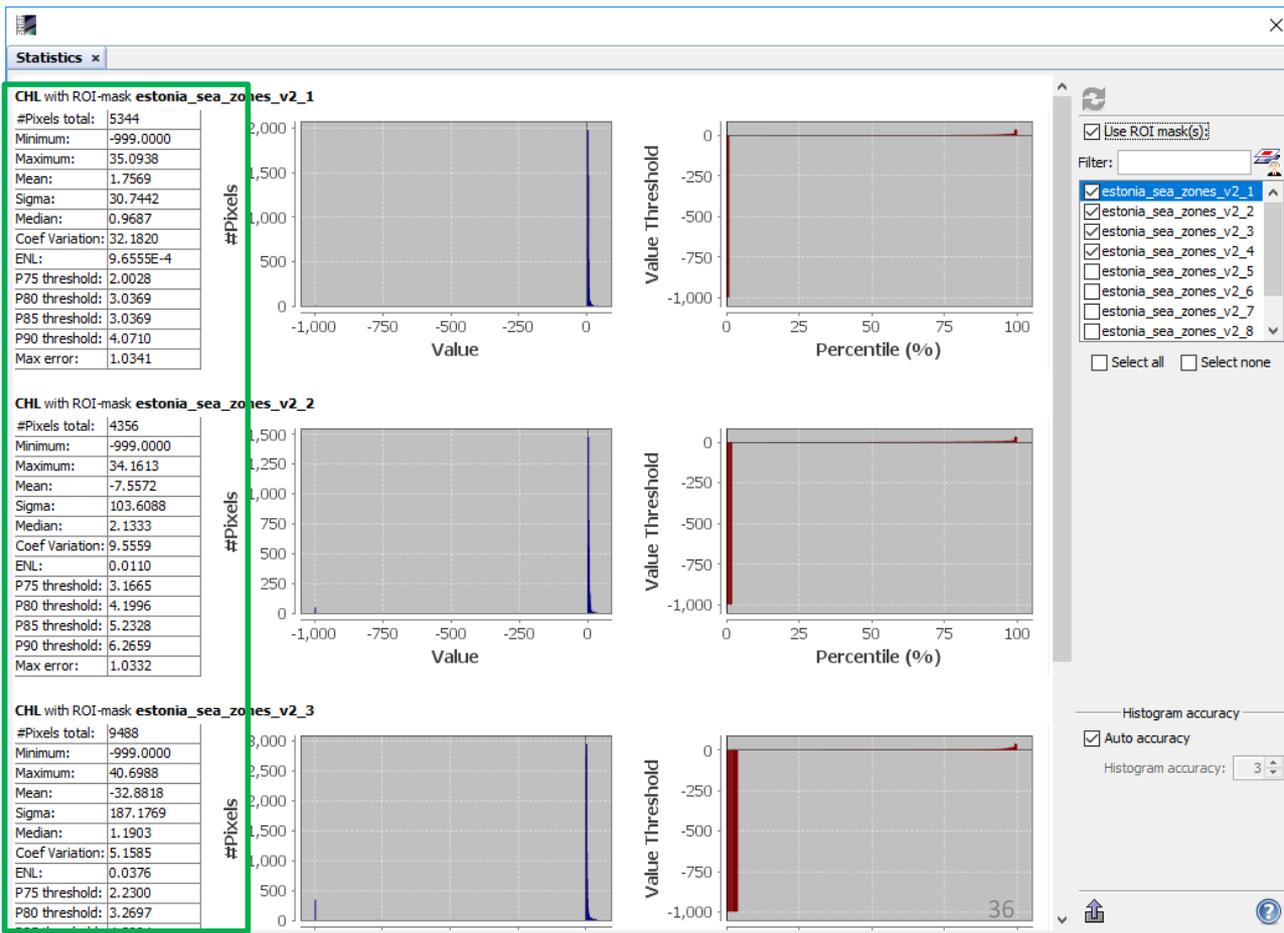
- estonia_sea_zones_v2_1
- estonia_sea_zones_v2_2
- estonia_sea_zones_v2_3
- estonia_sea_zones_v2_4
- estonia_sea_zones_v2_5
- estonia_sea_zones_v2_6
- estonia_sea_zones_v2_7
- estonia_sea_zones_v2_8

Select all Select none

Histogram accuracy

Auto accuracy

Histogram accuracy: 3



Next



```
D:\pke115_Coastal_2\SNAP_Zonal_Statistics\Launch_modello.bat - Notepad++
File Edit Search View Encoding Language Settings Macro Run Plugins Window ?
Launch_modello.bat
1 gpt -e "D:\MarineZoneStats.xml"
2 -PProductPath="D:\CMEMS\*.nc"
3 -PBandName="CHL"
4 -PZonazione="D:\Zones\Zones_TSI.shp"
5 -POutName="D:\Temp\Chl_Stats.shp"
6
7 gpt -e "D:\MarineZoneStats.xml"
8 -PProductPath="D:\WT\*.tif"
9 -PBandName="band_1"
10 -PZonazione="D:\Zones\Zones_TSI.shp"
11 -POutName="D:\Zonal_Stats\WT_Stats.shp"
12
MarineZoneStats.xml
1 <graph id="Graph">
2   <version>1.0</version>
3   <node id="StatisticsCalc">
4     <operator>StatisticsOp</operator>
5     <sources/>
6     <parameters>
7       <sourceProductPaths>$ProductPath
8     </sourceProductPaths>
9     <shapefile>$Zonazione</shapefile>
10    <startDate/>
11    <endDate/>
12    <bandConfigurations>
13      <bandConfiguration>
14        <sourceBandName>$BandName</sourceBandName>
15        <expression/>
16        <validPixelExpression/>
17      </bandConfiguration>
18    </bandConfigurations>
19    <outputShapefile>$OutName</outputShapefile>
20    <percentiles>90</percentiles>
21    <accuracy>3</accuracy>
22  </parameters>
23 </node>
</graph>
```

DOS batch script which invokes the SNAP GPT configuration file, providing input and output parameters

SNAP GPT configuration file (xml)

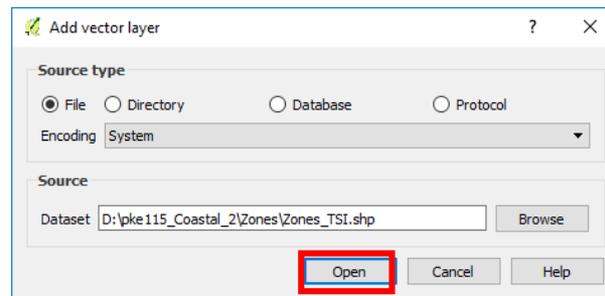
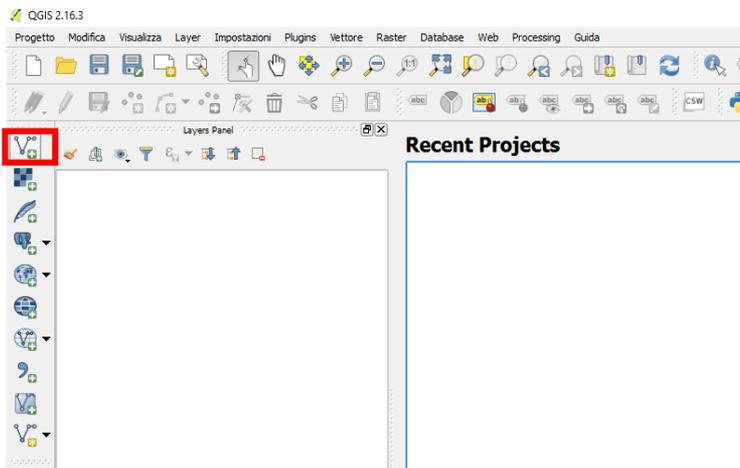
Next



Name	Date modified	Type	Size
Chl_Stats.dbf	11/11/2016 18:05	DBF File	5 KB
Chl_Stats.fix	11/11/2016 18:05	FIX File	1 KB
Chl_Stats.prj	11/11/2016 18:05	IDL project file	1 KB
Chl_Stats.oix	11/11/2016 18:05	QIX File	1 KB
Chl_Stats.shp	11/11/2016 18:05	SHP File	2,413 KB
Chl_Stats.shx	11/11/2016 18:05	SHX File	1 KB
Chl_Stats_band_mapping.txt	11/11/2016 18:44	Text Document	1 KB
WT_Stats.dbf	11/11/2016 18:01	DBF File	5 KB
WT_Stats.fix	11/11/2016 18:01	FIX File	1 KB
WT_Stats.prj	11/11/2016 18:01	IDL project file	1 KB
WT_Stats.oix	11/11/2016 18:01	QIX File	1 KB
WT_Stats.shp	11/11/2016 18:01	SHP File	2,413 KB
WT_Stats.shx	11/11/2016 18:01	SHX File	1 KB
WT_Stats_band_mapping.txt	11/11/2016 18:01	Text Document	1 KB

```
D:\pke115_Coastal_2\Zonal_Stats\Chl_Stats_band_mapping.txt - Notepad++
File Edit Search View Encoding Language Settings Macro Run Plugins Window ? X
Chl_Stats_band_mapping.txt WT_Stats_band_mapping.txt
1 vrg_CHL=average_CHL
2 mx_rrr_CHL=max_error_CHL
3 mx_CHL=maximum_CHL
4 median_CHL=median_CHL
5 mn_CHL=minimum_CHL
6 p90_thr_0=p90_threshold_CHL
7 sigma_CHL=sigma_CHL
8 total_CHL=total_CHL
9
10
11
12
13
14
1 vrg_bnd1=average_band_1
2 mx_rrr_0=max_error_band_1
3 mx_bnd1=maximum_band_1
4 mdn_bnd1=median_band_1
5 mn_bnd1=minimum_band_1
6 p90_thr_0=p90_threshold_band_1
7 sgm_bnd1=sigma_band_1
8 ttl_bnd1=total_band_1
9
```

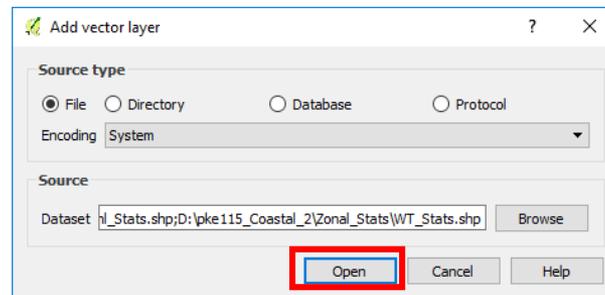
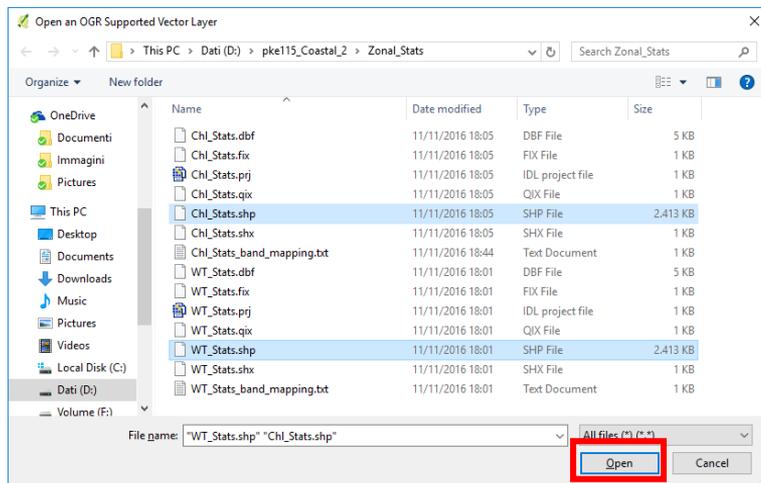
Next





The screenshot displays a GIS application window with the following components:

- Menu Bar:** Progetto, Modifica, Visualizza, Layer, Impostazioni, Plugins, Vettore, Raster, Database, Web, SCP, Processing, Guida.
- Toolbars:** Multiple toolbars for navigation, editing, and analysis. A red box highlights the 'V' (Vector) tool icon in the top-left toolbar.
- Layers Panel:** Located on the left, it shows a single layer named 'Zones_TSI'.
- Main Map Area:** Displays a map of a coastal region with a blue shaded area representing the 'Zones_TSI' layer.
- Status Bar:** At the bottom, it shows 'Attiva/disattiva modifica vettore in uso', 'Coordinata: -26254,6777740', 'Scala: 1:2.323.477', 'Rotazione: 0,0', and 'Visualizza EPSG:32635'.





Progetto Modifica Visualizza Layer Impostazioni Plugins Vettore Raster Database Web SCP Processing Guida

Layers Panel

- CHI_stats
- WT_stats
- Zones_TSI

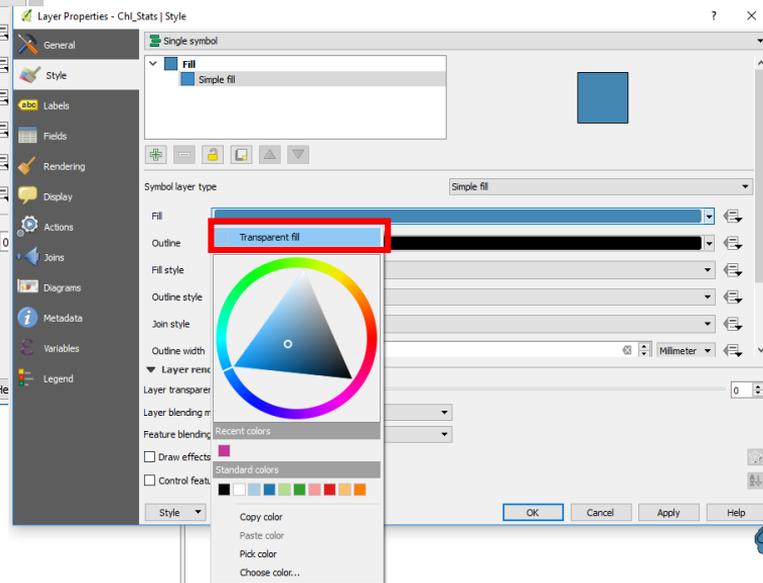
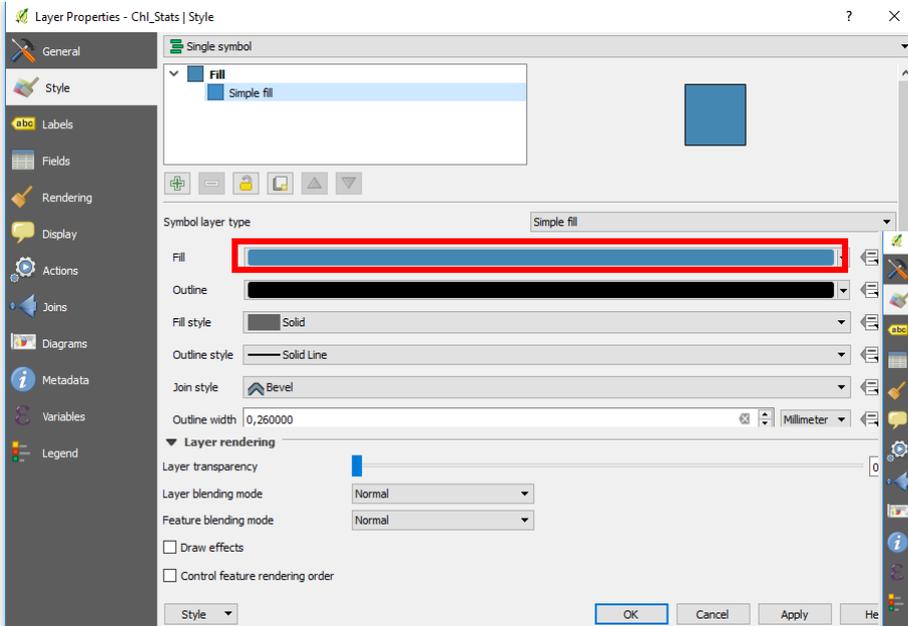
Dist: 0,010000 Min: 60 Max: 100 Preview T: 0 S: 200 0

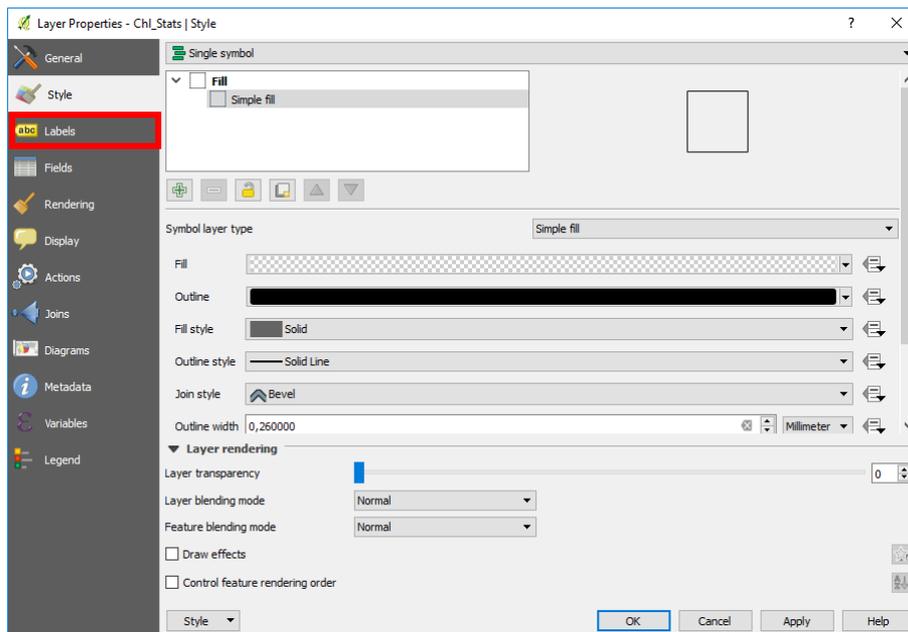
42

Coordinata: 18623,6756839 Scala: 1:2.323.477 Rotazione: 0,0 Visualizza EPSG:32635



The screenshot displays a GIS application window. The main map area shows a coastal region with a blue-shaded area. A context menu is open over the map, listing various actions such as 'Zoom sul layer', 'Aggiungi alla panoramica', 'Rimuovi', 'Duplica', 'Imposta la scala di visibilità del layer', 'Imposta il SR del layer', 'Imposta il SR del progetto dal layer', 'Stili', 'Apri tabella attributi', 'Modifica', 'Salva con nome...', 'Salva come file di definizione del layer...', 'Filtro...', 'Mostra totale elementi', and 'Proprietà'. The 'Proprietà' option is highlighted with a red rectangular box. The interface includes a top toolbar with various icons, a left sidebar with tool icons, and a bottom status bar with coordinates, scale, and rotation information.







The screenshot shows a software interface for configuring layer labels. The window title is "Layer Properties - Chl_Stats | Labels". On the left, a sidebar lists various configuration categories: General, Style, Labels (selected), Fields, Rendering, Display, Actions, Joins, Diagrams, Metadata, Variables, and Legend. The main area is divided into a top section with a dropdown menu set to "No labels" and a "Show labels for this layer" option highlighted with a red rectangle. Below this, there are sections for "Text" and "Formatting" with various settings: Font (MS Shell Dlg 2), Style (Normal), Size (8,250), Color (black), Transparency (0%), Type case (No change), Spacing (letter and word), and buttons for OK, Cancel, Apply, and Help.



Layer Properties - Chl_Stats | Labels

Show labels for this layer

Label with: [Field Selection]

▼ Text

- 123 Zone_Type
- 1.2 Area
- 123 Id
- 123 AOI
- 1.2 vrg_CHL
- 1.2 mx_rrr_CHL
- 1.2 mx_CHL
- 1.2 median_CHL
- 1.2 avr_CHL

▼ Text

- 1.2 p90_trvs_0

abc Text

Font: MS Shell Dlg 2

Style: Normal

Size: 8,250

Points

Color: [Black]

Transparency: 0 %

Type case: No change

Spacing: letter 0,0000

word 0,0000

Style [v] OK Cancel Apply Help



Layer Properties - Chl_Stats | Labels

Show labels for this layer

Label with 1.2 p90_thrs_0

Text/Buffer sample

Lorem Ipsum

abc Text

ab Formatting

abc Buffer

Background

Shadow

Placement

Rendering

Text

Font MS Shell Dig 2

Style Bold

Size 12,0000

Points

Color

Transparency 0 %

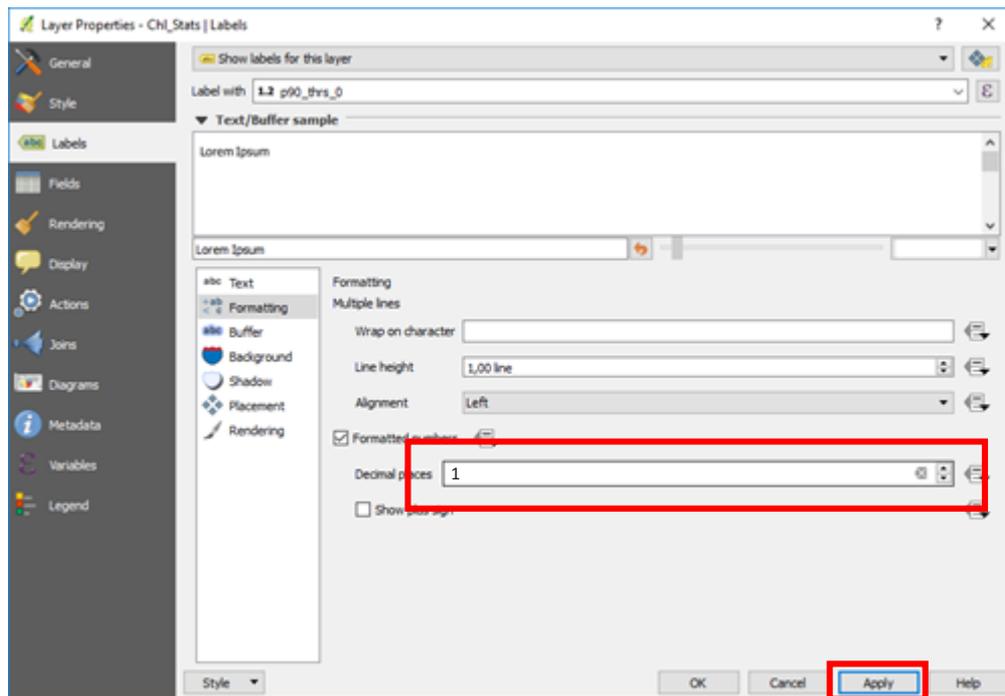
Type case No change

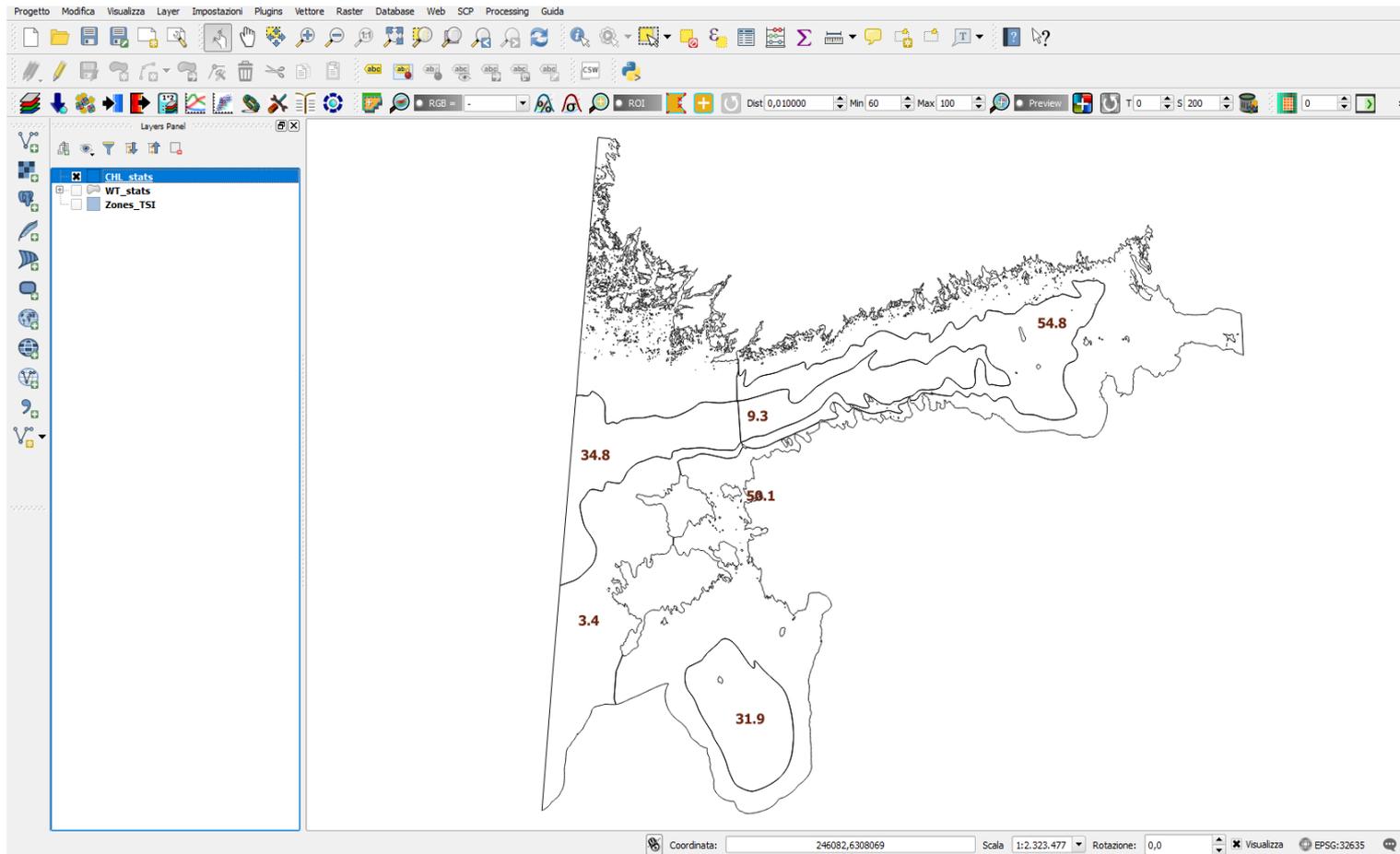
Spacing letter 0,0000

word 0,0000

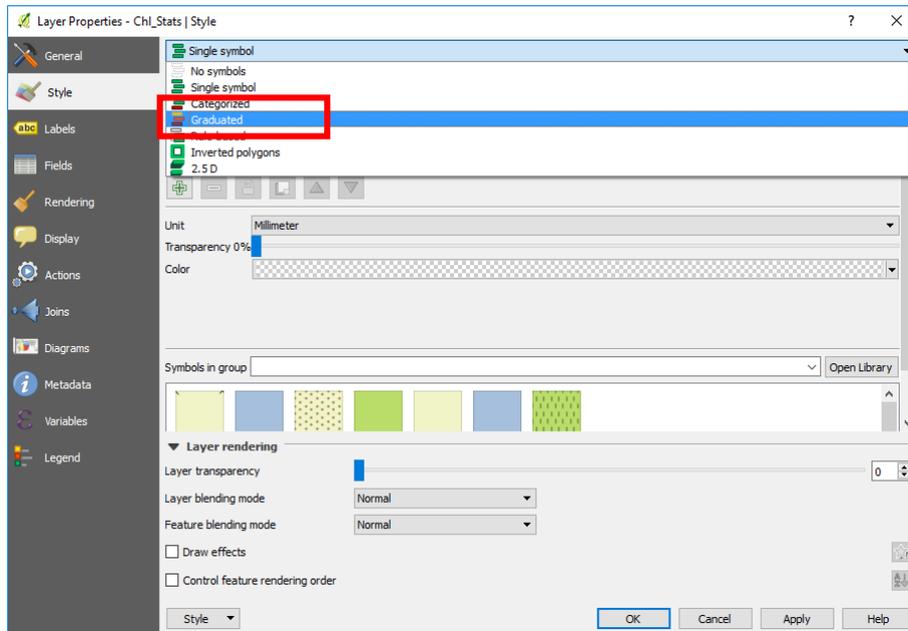
Style

OK Cancel Apply Help





Next





Layer Properties - Ch_Stats | Style

General

Style

Labels

Fields

Rendering

Display

Actions

Joins

Diagrams

Metadata

Variables

Legend

Graduated

Column: 1.2 p90_thrs_0

Symbol: [Change...]

Legend Format: %1 - %2 Precision 1 [Trim]

Method: Color

Color ramp: [source] [Edit] [Invert]

Symbol	Values	Legend
<input checked="" type="checkbox"/>	0.100 - 3.926	0.0996 - 3.9258
<input checked="" type="checkbox"/>	3.926 - 7.752	3.9258 - 7.7521
<input checked="" type="checkbox"/>	7.752 - 11.578	7.7521 - 11.5784

Mode: Equal Interval Classes: 5

[Classify] [Delete all] [Advanced]

Link class boundaries

Layer rendering

Layer transparency: 0

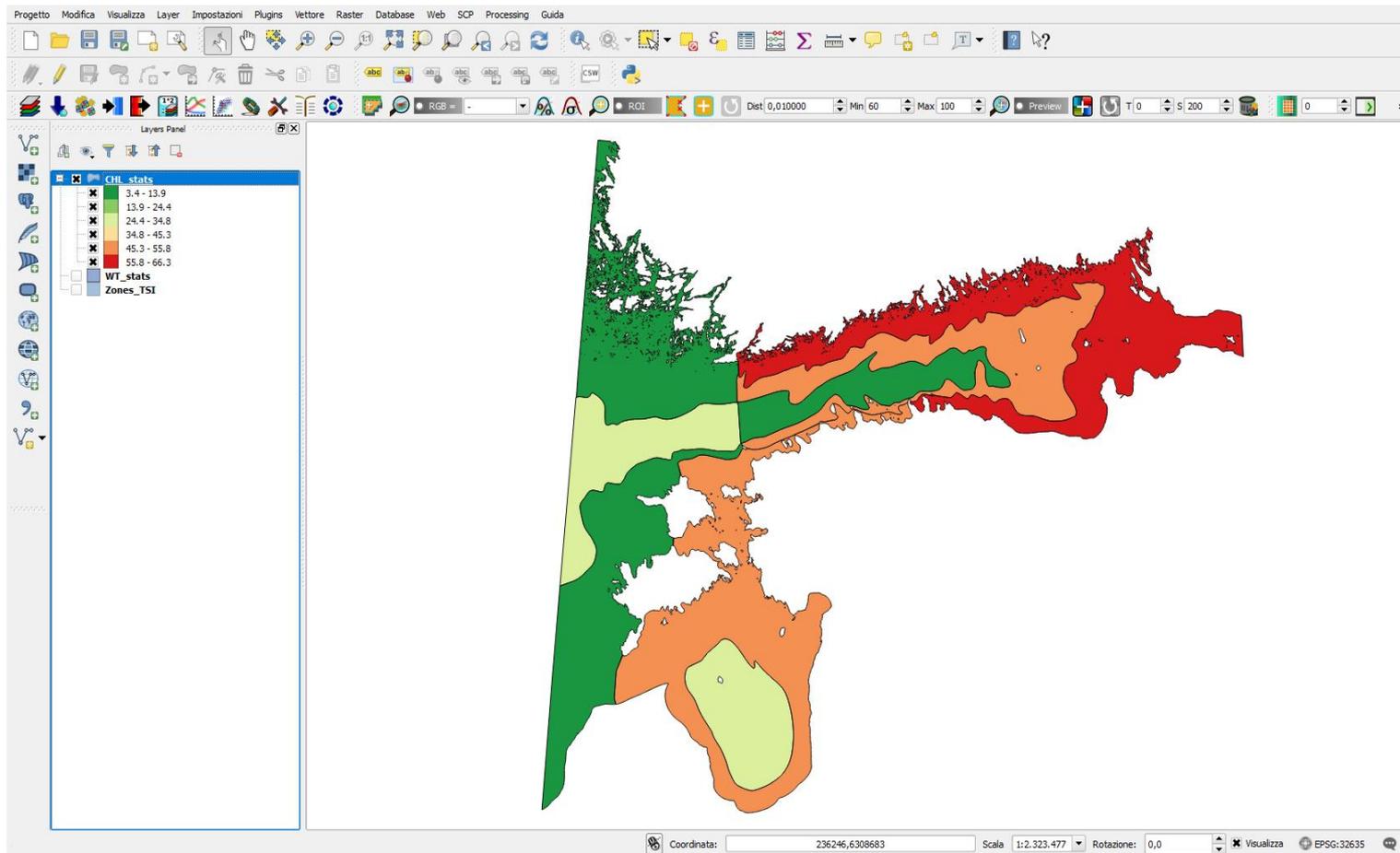
Layer blending mode: Normal

Feature blending mode: Normal

Draw effects

Control feature rendering order

Style [OK] [Cancel] [Apply] [Help]



Next



Layer Properties - WT_Stats | Style

General

Style

Column: 1.2 vrg_bnd1

Symbol: Change...

Legend Format: %1 - %2 Precision 1 Trim

Method: Color

Color ramp: [source] Edit Invert

Classes Histogram

Symbol	Values	Legend
<input checked="" type="checkbox"/>	2.352 - 8.126	2.3522 - 8.1265
<input checked="" type="checkbox"/>	8.126 - 13.901	8.1265 - 13.9007
<input checked="" type="checkbox"/>	13.901 - 19.675	13.9007 - 19.6750

Mode: Equal Interval

Classify Delete all

Link class boundaries

Layer rendering

Layer transparency

Layer blending mode: Normal

Feature blending mode: Normal

Draw effects

Control feature rendering order

Style

OK Cancel Apply

Layer Properties - WT_Stats | Labels

General

Show labels for this layer

Label with: 1.2 vrg_bnd1

Text/Buffer sample

Lorem Ipsum

Text

Font: MS Shell Dlg 2

Style: Bold

Size: 12,0000

Color: [Red]

Transparency: 0 %

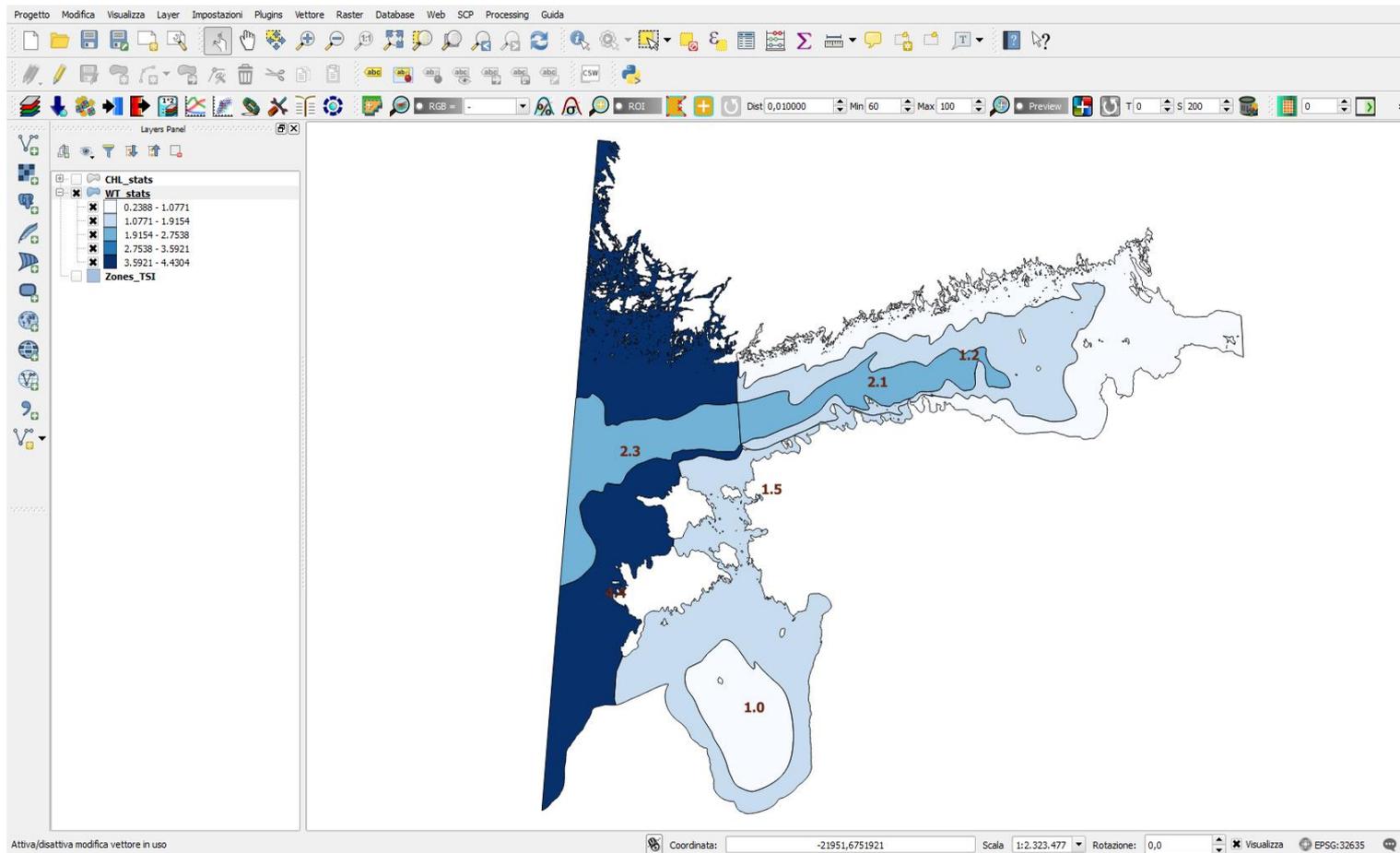
Type case: No change

Spacing: letter 0,0000 word 0,0000

Style

OK Cancel Apply Help

Next





Marine
Monitoring

Thank you