

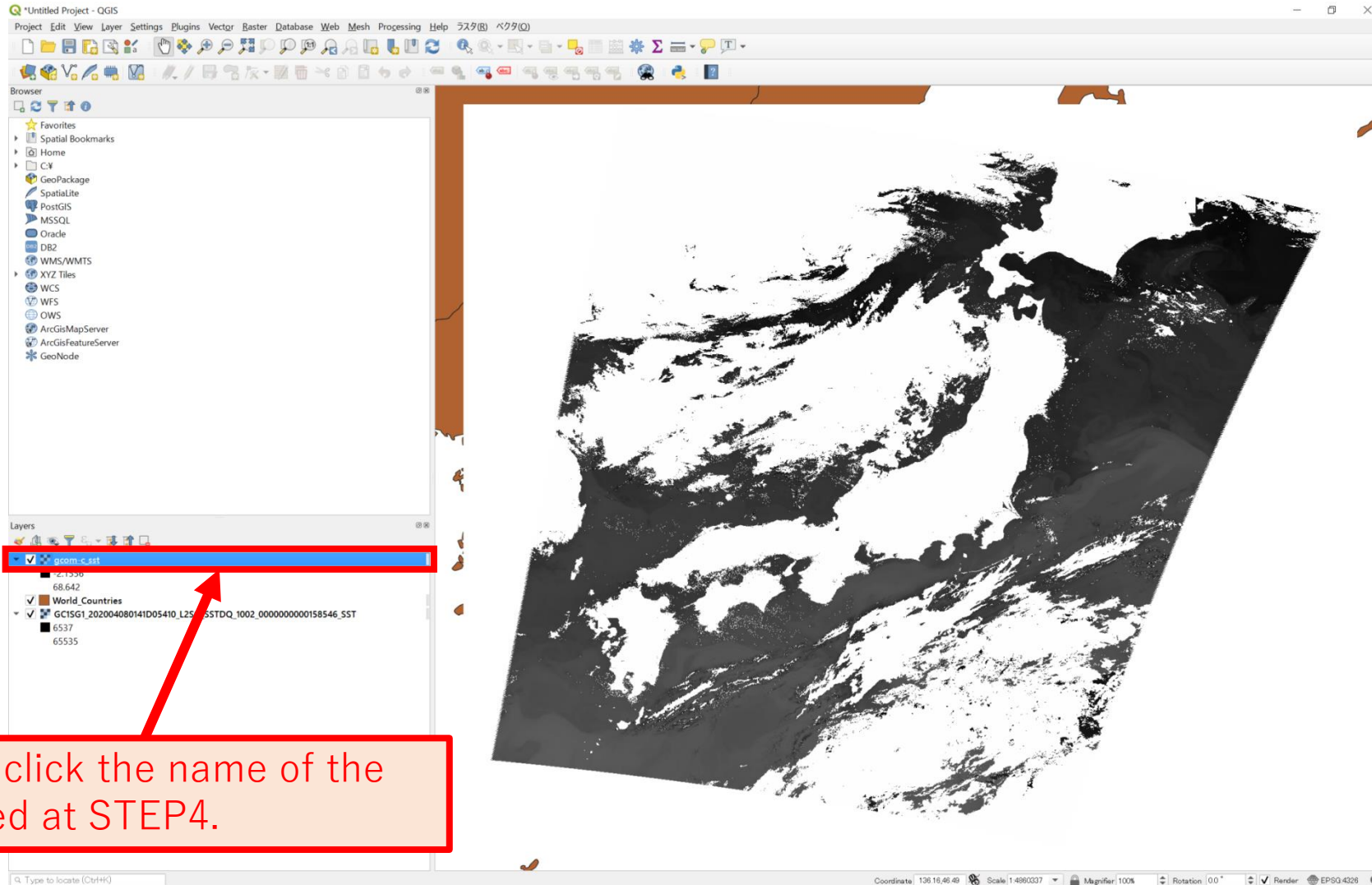
## Imaging procedure for GCOM-C(SHIKISAI) product by using QGIS

STEP.5 Display sea surface temperature in color

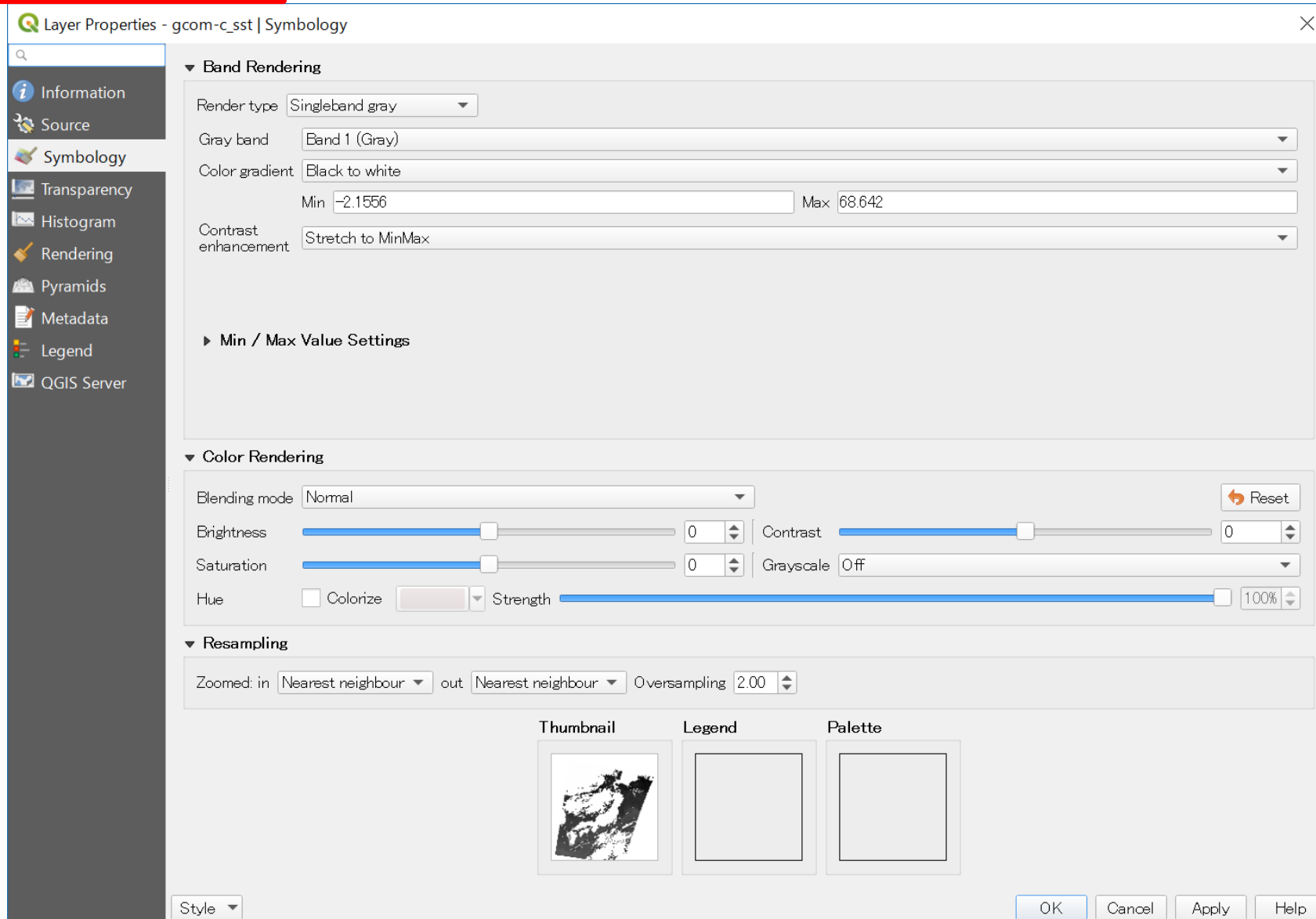
STEP.6 Adjust the image and save it as your own data

## STEP5 Display sea surface temperature in color

It is difficult to identify the temperature in a grayscale image. Therefore, you can make it easier to identify by coloring the image.



A window like this will open.



Layer Properties - gcom-c\_sst | Symbology

▼ Band Rendering

- Multiband color
- Paletted/Unique values
- Singleband gray
- Singleband pseudocolor
- Hillshade

Render type: Singleband pseudocolor

Gray band: [Empty]

Color gradient: Black to white

Min: -2.1556 Max: 68.642

Contrast enhancement: Stretch to MinMax

► Min / Max Value Settings

▼ Color Rendering

Blending mode: Normal [Reset]

Brightness: [Slider] 0 Contrast: [Slider] 0

Saturation: [Slider] 0 Grayscale: Off

Hue:  Colorize [Color] Strength: [Slider] 100%

▼ Resampling

Zoomed in: Nearest neighbour out: Nearest neighbour Oversampling: 2.00

Thumbnail Legend Palette

Style ▼ [OK] [Cancel] [Apply] [Help]

Select "Singleband pseudocolor" from "Render type".

Layer Properties - gcom-c\_sst | Symbology

▼ Band Rendering

Render type: Singleband pseudocolor

Band: Band 1 (Gray)

Min: 10 Max: 14

► Min / Max Value Settings

Interpolation: Discrete

Color ramp: [Color Ramp]

Label unit suffix: [Label Unit Suffix]

Value <=	Color
10.8	[Color]
11.6	[Color]
12.4	[Color]
11.6 - 12.4	[Color]

Mode: Continuous Classes: 5

Classify [Icons]

Clip out of range values

▼ Color Rendering

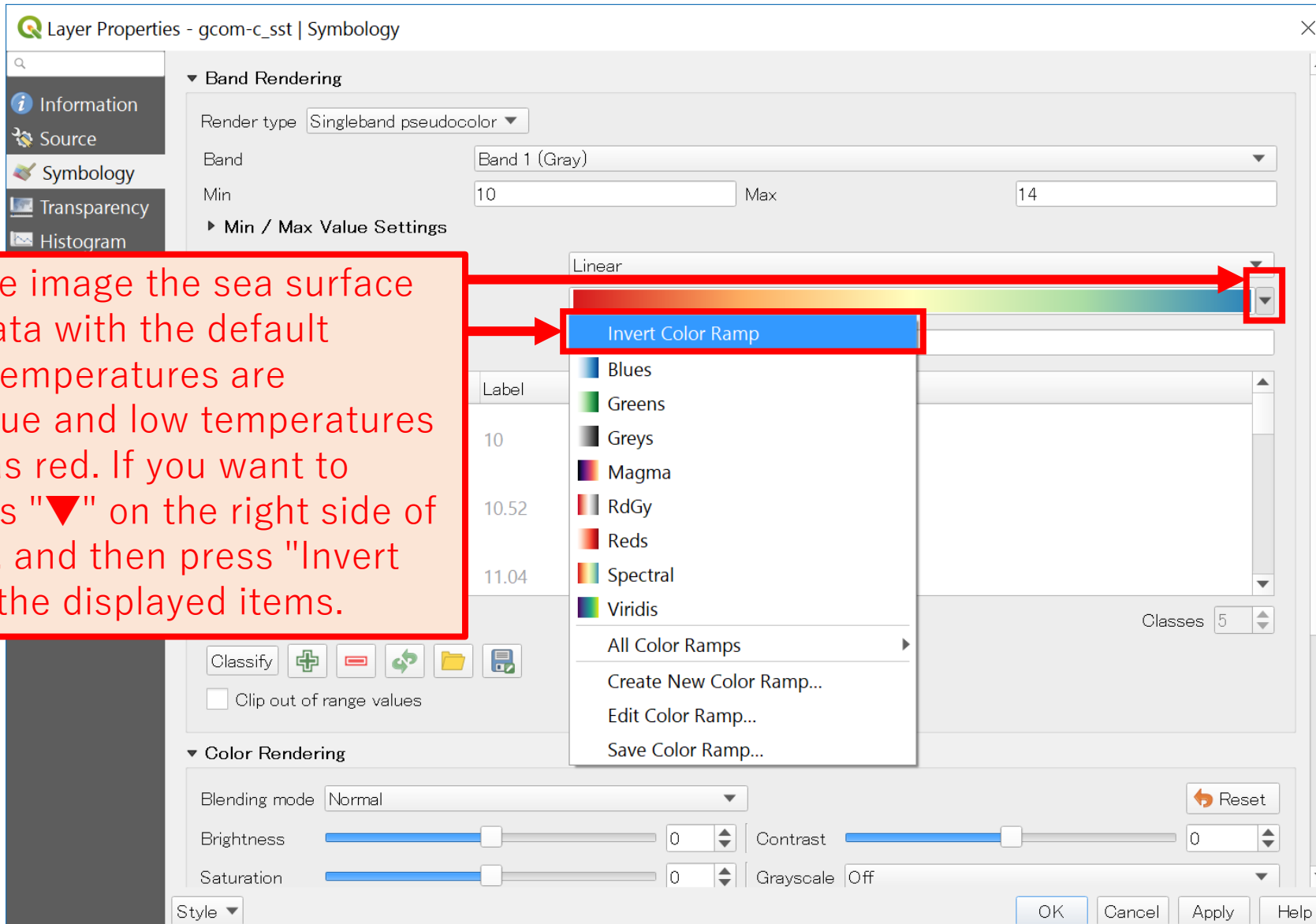
Blending mode: Normal [Reset]

Brightness: [Slider] 0 Contrast: [Slider] 0

Saturation: [Slider] 0 Grayscale: Off

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

Enter the sea surface temperature range you want to display. In this example, 10 °C and 14°C are set as the minimum and maximum value respectively.



When you make image the sea surface temperature data with the default settings, high temperatures are displayed as blue and low temperatures are displayed as red. If you want to reverse it, press "▼" on the right side of the color ramp, and then press "Invert color ramp" in the displayed items.

Layer Properties - gcom-c\_sst | Symbology

Information  
Source  
Symbology


▼ Band Rendering

Render type: Singleband pseudocolor




Band: Band 1 (Gray)

Min: Max 14

Interpolation: Linear






Color ramp: 

Label unit suffix:

Value	Color	Label
10		10
11		11
12		12

Mode: Continuous


Classes: 5


Classify     


Clip out of range values

▼ Color Rendering

Blending mode: Normal

Brightness:  0

Saturation:  0

Contrast:  0

Grayscale: Off

Reset

Style

OK Cancel Apply Help

The color ramp will be reversed like this.

Put a check mark.

Layer Properties - gcom-c\_sst | Symbology

Information  
Source  
Symbology  
Transparency  
Histogram  
Rendering  
Pyramids  
Metadata  
Legend  
QGIS Server

► Min / Max Value Settings

Interpolation: Linear

Color ramp: [Color Ramp]

Label unit suffix: [Text]

Value	Color	Label
10	[Red]	10
10.52	[Orange]	10.52
11.04	[Yellow]	11.04

Mode: Continuous

Classify [Icons]

Clip out of range values

▼ Color Rendering

Blending mode: Normal [Reset]

Brightness [Slider] 0 [Spin]

Saturation [Slider] 0 [Spin]

Contrast [Slider] 0 [Spin]

Grayscale: Off

Hue  Colorize [Color] Strength [Slider] 100% [Spin]

▼ Resampling

Zoomed: in Nearest neighbour out Nearest neighbour Oversampling 2.00 [Spin]

Style ▼

OK Cancel Apply Help

You can also make fine adjustments to "Brightness", "Saturation" and "Contrast" in this field.



Layer Properties - gcom-c\_sst | Symbology

Information  
Source  
Symbology  
Transparency  
Histogram  
Rendering  
Pyramids  
Metadata  
Legend  
QGIS Server

► Min / Max Value Settings

Interpolation: Linear

Color ramp: [Color Ramp]

Label unit suffix: [Text Box]

Value	Color	Label
10	[Red]	10
10.52	[Orange]	10.52
11.04	[Light Orange]	11.04

Mode: Continuous Classes: 5

Classify [Icons]

Clip out of range values

▼ Color Rendering

Blending mode: Normal [Reset]

Brightness: [Slider] 0 Contrast: [Slider] 0

Saturation: [Slider] 0 Grayscale: Off

Hue:  Colorize [Strength] 100%

▼ Resampling

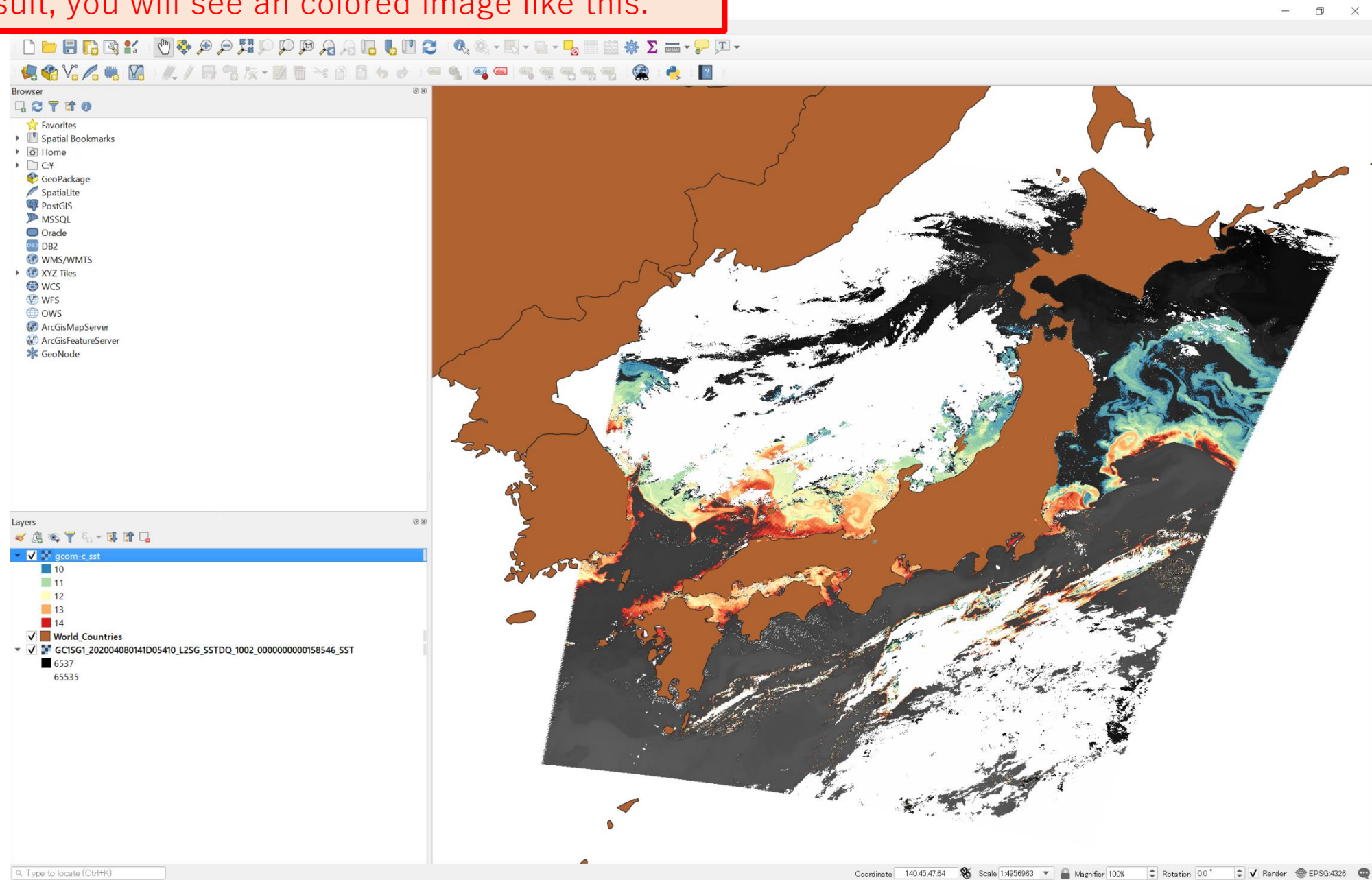
Zoomed: in Nearest neighbour out Nearest neighbour Oversampling: 2.00

Style ▼

OK Cancel Apply Help

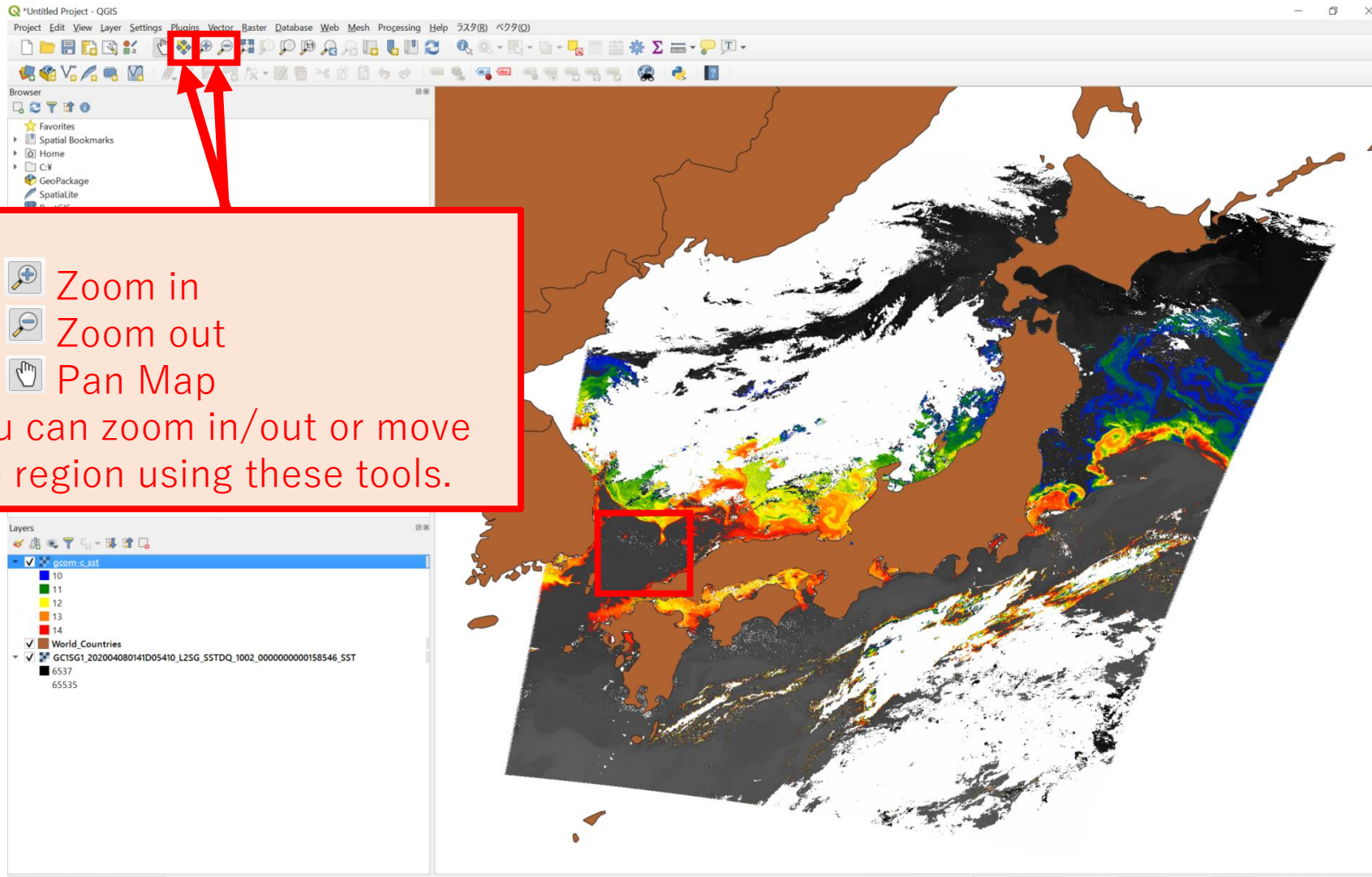
Click "Apply" and then "OK".

As a result, you will see an colored image like this.



## STEP6 Adjust the image and save it as your own data

You can move the display region or adjust the light and shade of the color and save it as your own data.



The screenshot shows the QGIS interface with a map of the North Pacific Ocean. The map displays sea surface temperature data using a color scale from blue (10) to red (14). A red box highlights a specific area on the map. The toolbar at the top contains several navigation tools, with three of them (Zoom in, Zoom out, and Pan Map) highlighted by red arrows. A red box on the left side of the map contains the following text:

①9

- Zoom in
- Zoom out
- Pan Map

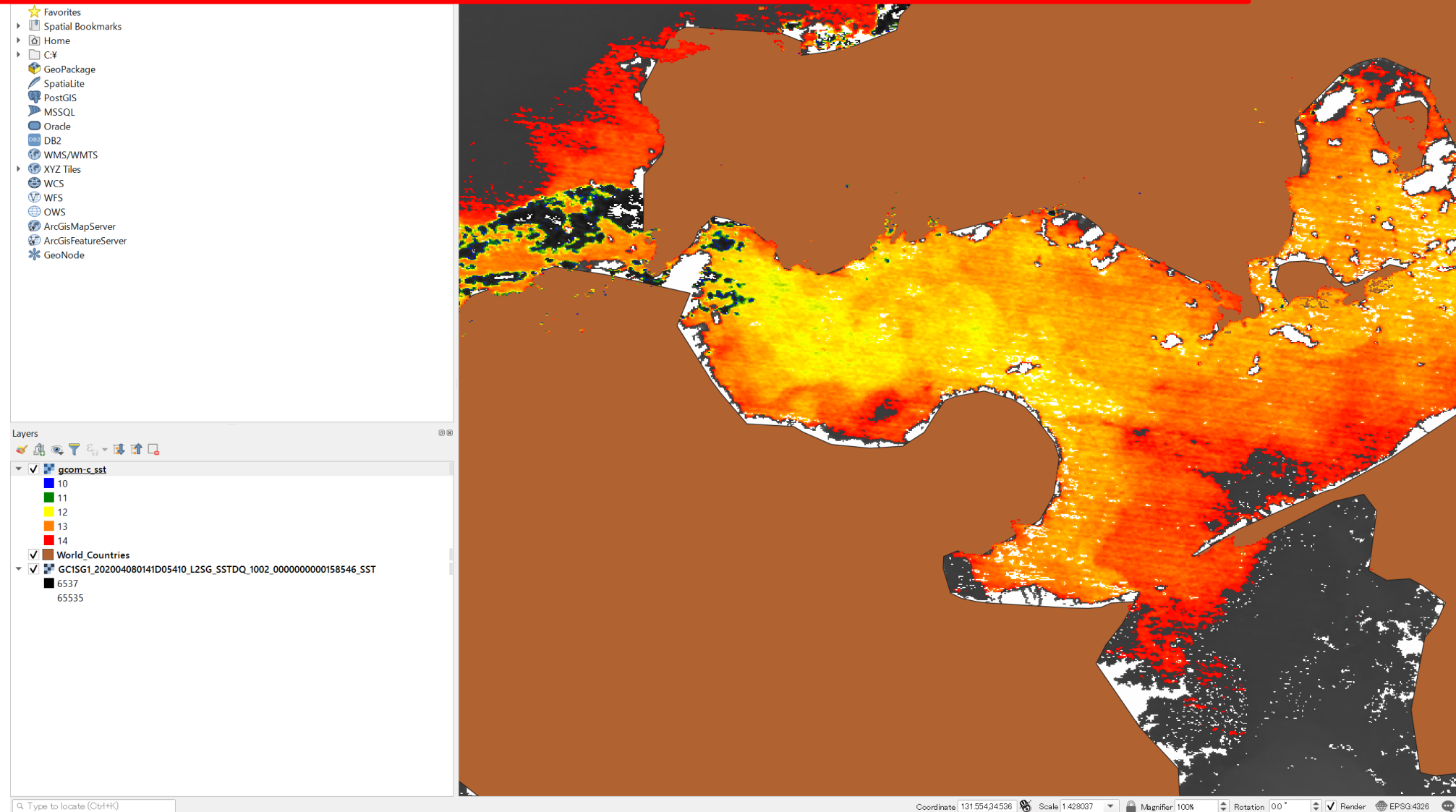
You can zoom in/out or move the region using these tools.

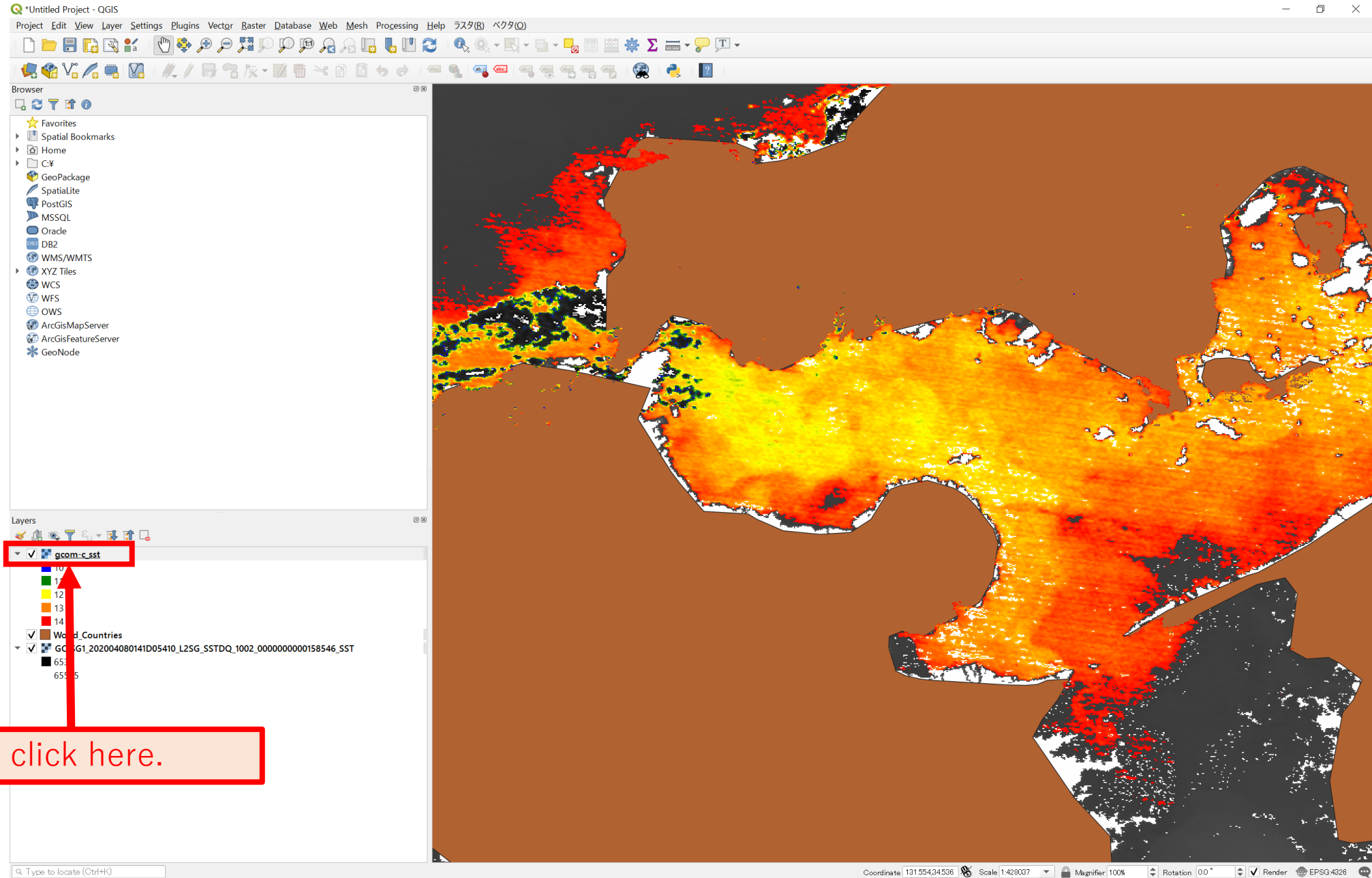
The Layers panel at the bottom left shows the following layers:

- gcom\_sst
  - 10
  - 11
  - 12
  - 13
  - 14
- World Countries
- GCTS1\_202004080141D05410\_L2SG\_SSTDQ\_1002\_000000000158546\_SST
  - 6537
  - 65535

The status bar at the bottom indicates the coordinate is 134.42, 47.01, the scale is 1:4833168, the magnifier is 100%, and the rotation is 0.0°.

As an example, here is the result of zooming around The sea of Suonada in Japan. If the set temperature range was incorrected and difficult to understand the distribution of temperature, adjust the range.





Double click here.

Layer Properties - gcom-c\_sst | Symbology

**Band Rendering**

Render type: Singleband pseudocolor

Band: Band 1 (Gray)

Min: 10 Max: 16

**Min / Max Value Settings**

Interpolation: Linear

Color ramp: [Color ramp bar]

Label unit suffix: [Text box]

Value	Color	Label
10	[Blue square]	10
11.5	[Green square]	11.5
13	[Yellow square]	13

Mode: Continuous Classes: 5

Classify [Icons]

Clip out of range values

**Color Rendering**

Blending mode: Normal [Reset]

Brightness: [Slider] 0 Contrast: [Slider] 0

Saturation: [Slider] 0

Hue:  Colorize [Dropdown] Strength: [Slider]

**Resampling**

Zoomed in: Nearest neighbour out: Nearest neighbour Oversampling: 2.00

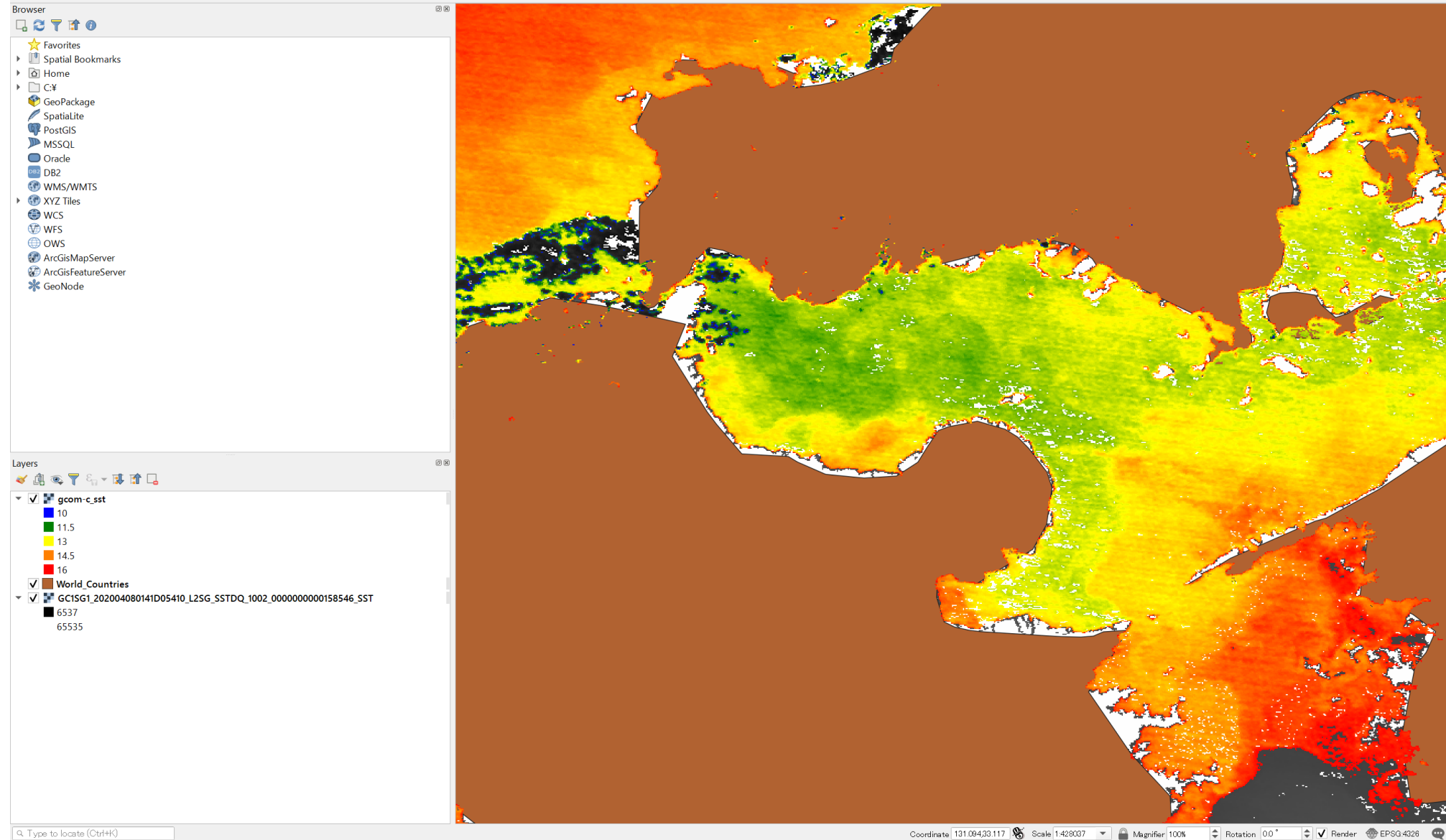
Style [Dropdown]

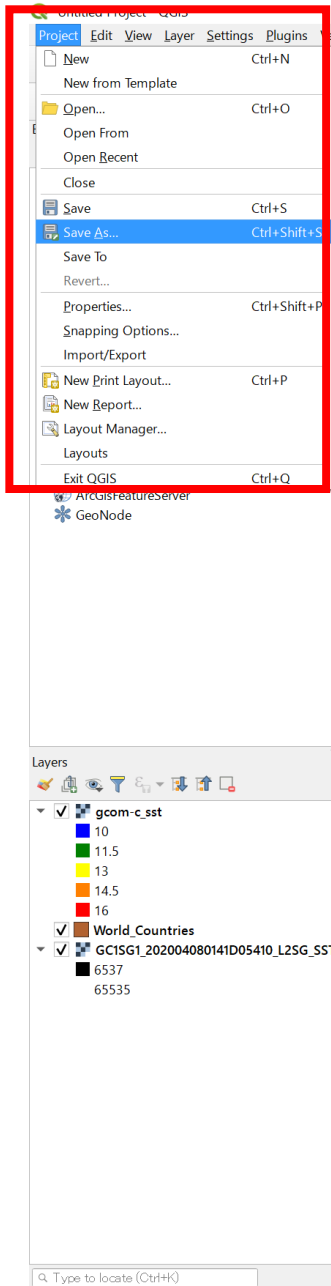
OK Cancel Apply Help

Re-set the maximum value to 16°C.

Click "Apply" and then "OK".

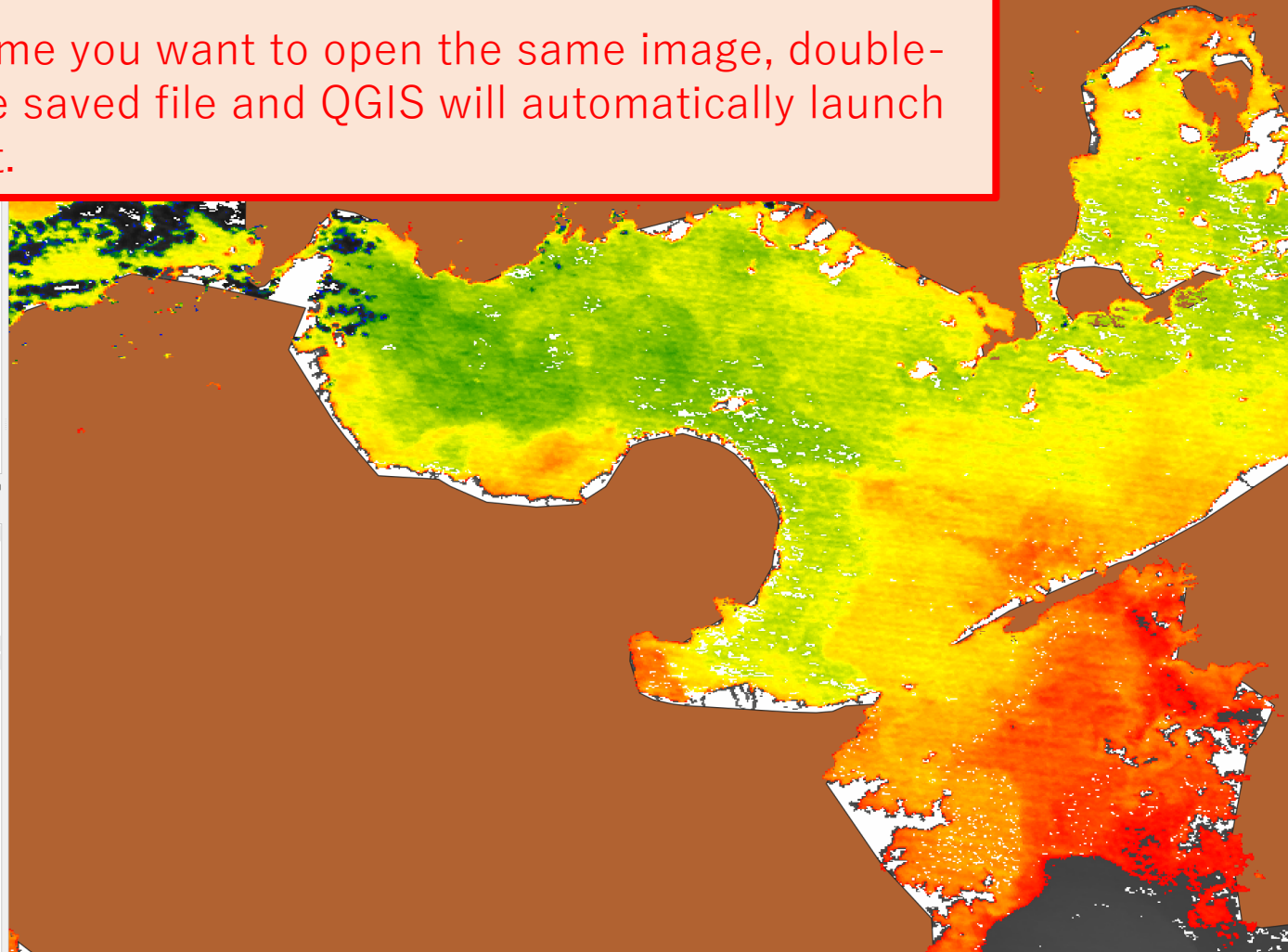
You can identify that the distribution of temperature is easier to understand than the image before adjustment.



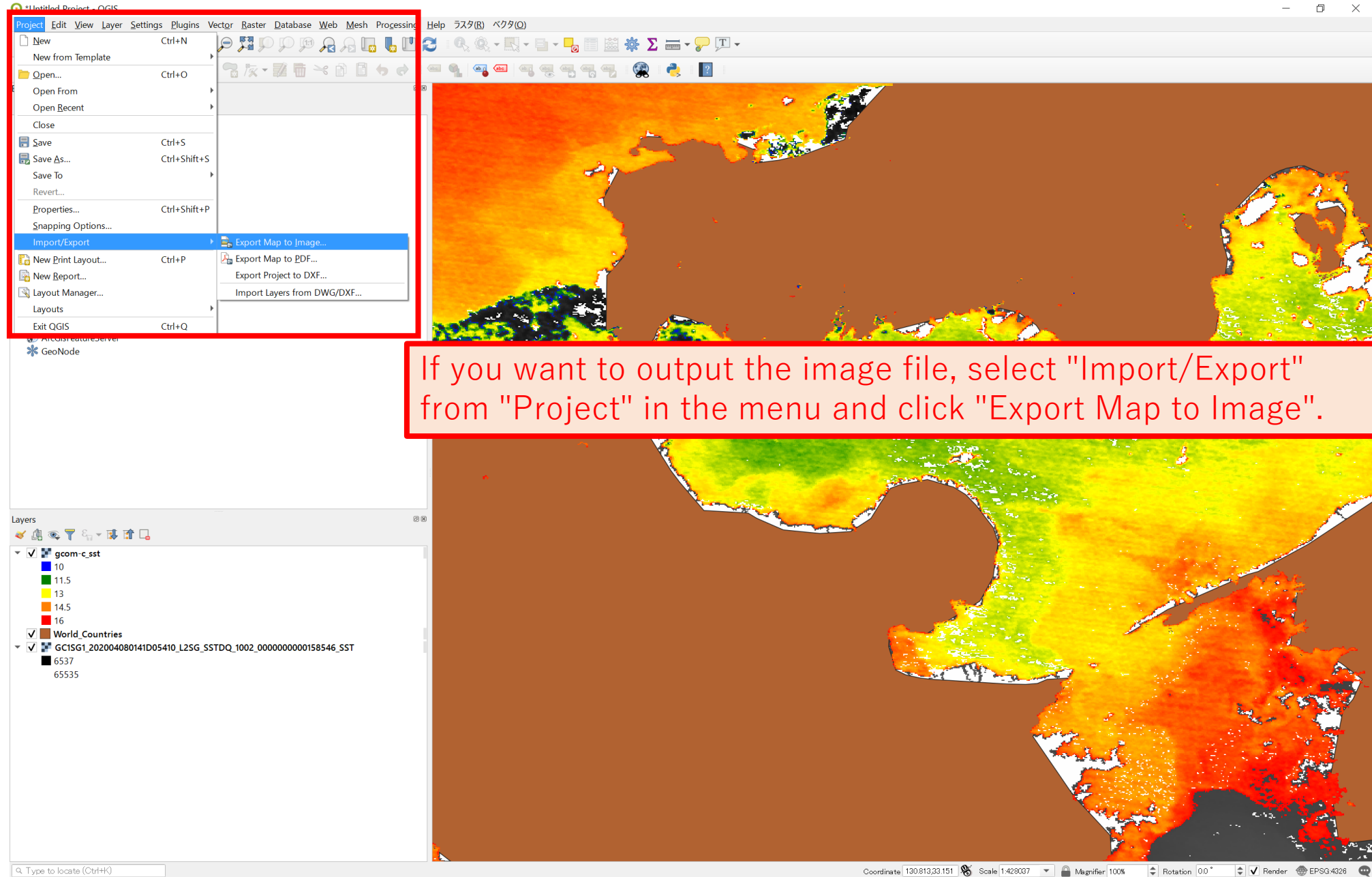


To save the sea surface temperature data you created, select "Save As" from "Project" in the menu, name the file and save it in a folder.

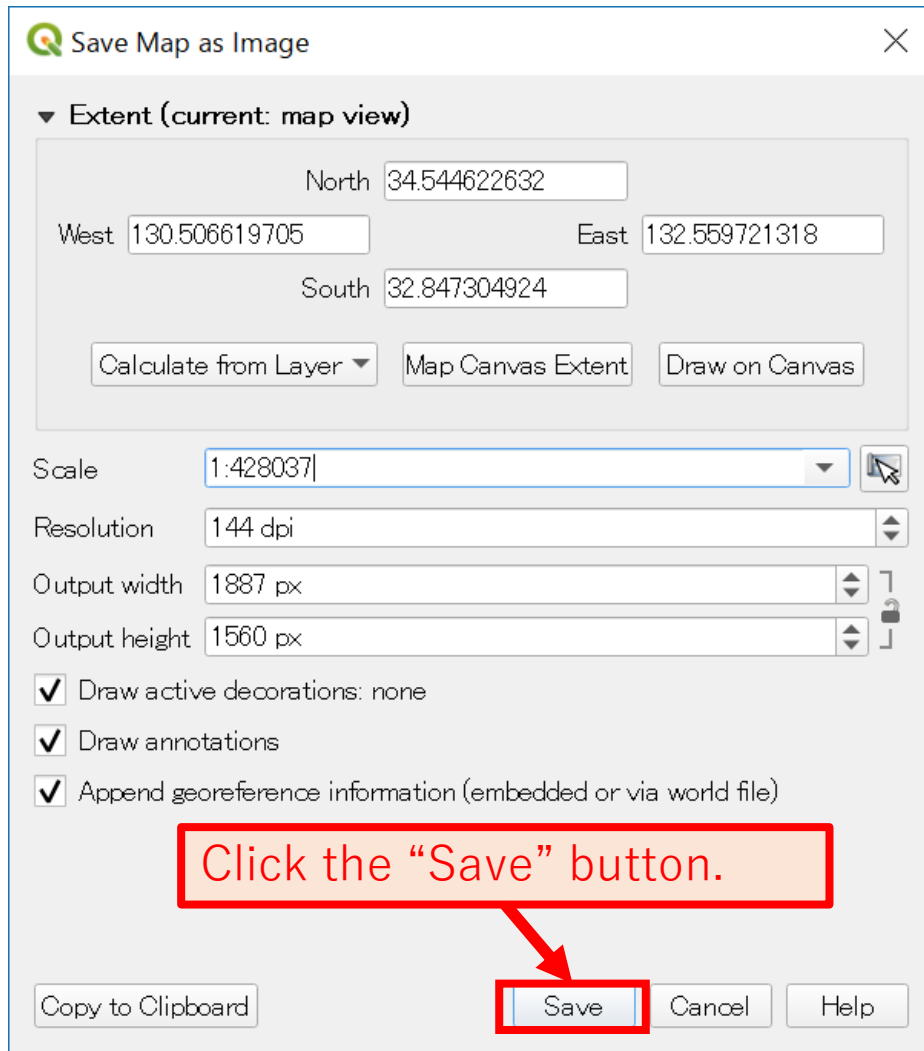
The next time you want to open the same image, double-click on the saved file and QGIS will automatically launch and open it.







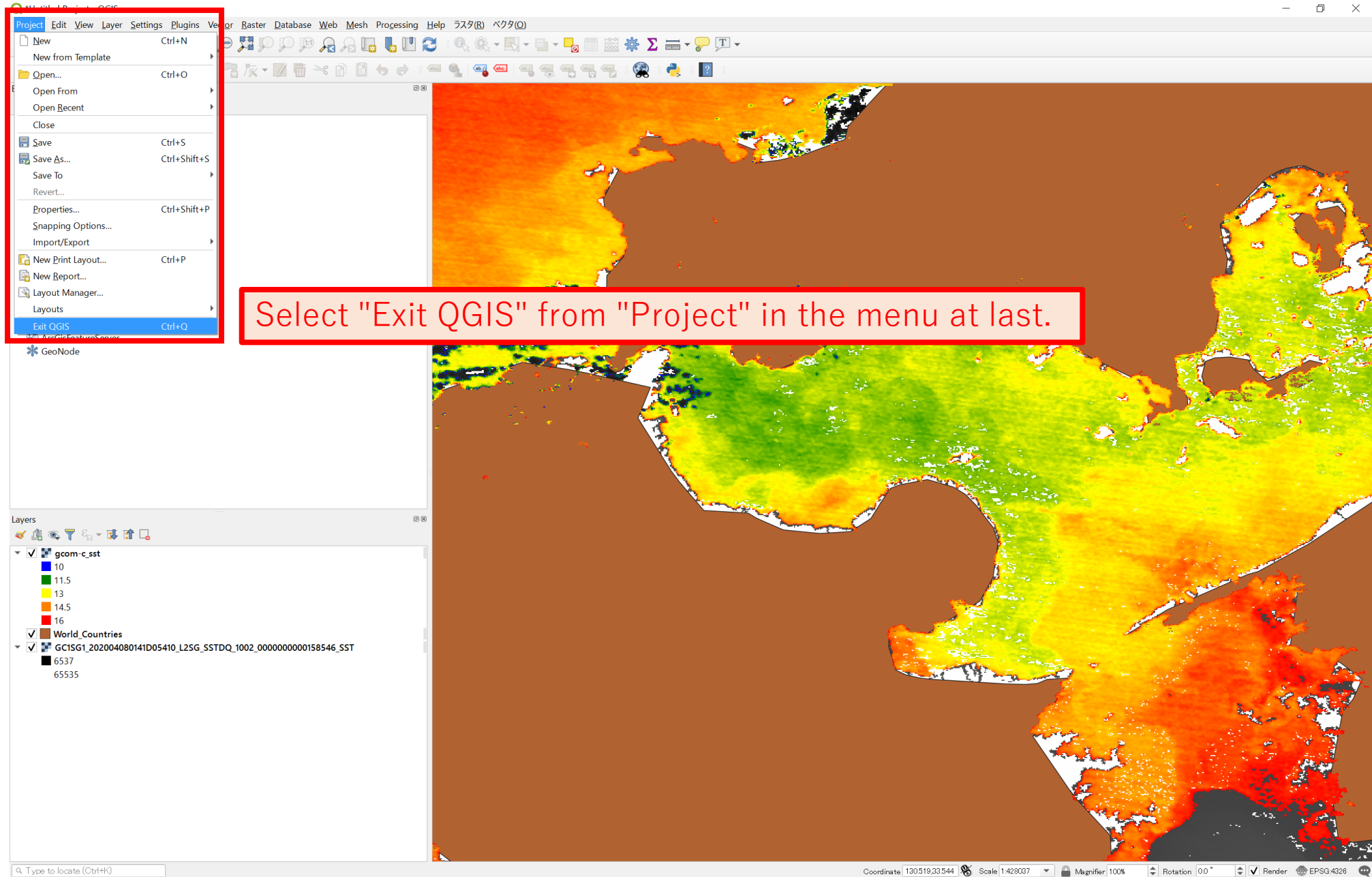
If you want to output the image file, select "Import/Export" from "Project" in the menu and click "Export Map to Image".



※The screen is Japanese version Windows 10.



※ You can select various image type with this menu.



# That's it for the basic usage of QGIS.

Also please refer to the following pages:

## **SHIKISAI Portal**

It contains the links to useful information sites, like a FAQ, about GCOM-C (SHIKISAI) for using the data.

[https://shikisai.jaxa.jp/index\\_en.html](https://shikisai.jaxa.jp/index_en.html)

## **G-Portal User's manual**

This is a manual for operating the G-Portal for users.

[https://gportal.jaxa.jp/gpr/assets/mng\\_upload/COMMON/upload/GPortalUserManual\\_en.pdf](https://gportal.jaxa.jp/gpr/assets/mng_upload/COMMON/upload/GPortalUserManual_en.pdf)

## **Procedure of search and download data by using G-Portal**

These contents for beginners show the procedure of search and download satellite products by using G-Portal.

<https://gportal.jaxa.jp/gpr/information/beginner1?lang=en>

[https://gportal.jaxa.jp/gpr/assets/mng\\_upload/COMMON/upload/Procedure\\_2\\_Display\\_SST\\_en.pdf](https://gportal.jaxa.jp/gpr/assets/mng_upload/COMMON/upload/Procedure_2_Display_SST_en.pdf)

## **QGIS official page**

This is an official page of QGIS. it releases the detailed information for users, how to download QGIS, user's guide, etc.

<https://qgis.org/en/site/>