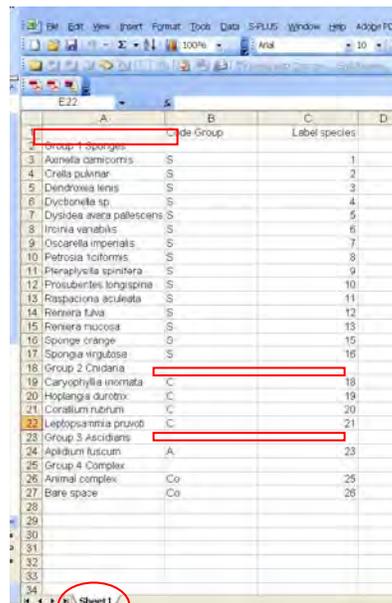


**Summary of the basic operations of Seascape.** The complete user manual is available online (<http://www.seascapesoft.org>).

Please use the following citation in published literature using Seascape: Teixidó N, Albajes-Eizagirre A, Bolbo D, Le Hir E, Demestre M, Garrabou J, Guigues L, Gili JM, Piera J, Prelot T, Soria-Frisch A (2011) High-resolution software for Segmentation and Cover Classification Analyses of Seabed Images (Seascape). Mar Ecol Prog Ser 431: 45-53

1) To create the Excel file by the user with a species/category list



Requirements:

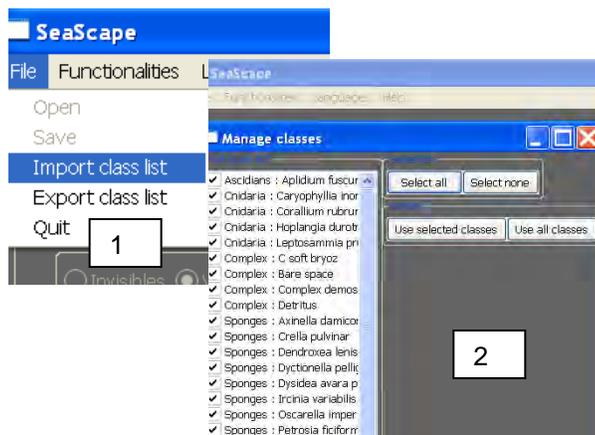
- Only Excel 1997-2003 spreadsheet
- File located in Data directory
- Only Sheet 1 is functional and written in English. Delete others sheets

Description

Column A: Species name classified by groups  
 Column B: Code Group  
 Column C: Label Species

Empty cells

2) To import species list



Description

- 1) Select File> Import class list
- 2) User can select all or a subset of species (Select all, Use selected classes, Use all classes, Select none)

3) To define the colour code of species list (RGB, values from 1-255)

**SeaScape**  
File Functionalities Languages Help

Segment an image  
Manage ColorMaps  
Extract classification on BMP  
Extract classification on XLS  
Show data

1

Manage ColorMap values for each class color

Class Id	Red	Green	Blue	Color	Species name
0	0	255	255		
1	255	215	235		Arnettea dami
2					Orella pulvina
3					Dendrosea levi
4					Dyctyonella pe
5					Dyctidea avaris
6					Drcinia variabilis
7					Oscarella imp
8					Petrosia ficifo
9					Pteraplyllia s
10					Prosuberites l
11					Raspaciona ae
12					Reniera fulva
13					Reniera muc
14					Spirastrella c
15					Sponge orang
16					Spongia virgu
17					
18					Caryophyllia s
19					Corallium rub
20					Hoplangia dur
21					Leptosammia
22	0	166	255		
23	0	162	255		
24	0	159	255		
25					Apidium fusco

2

3

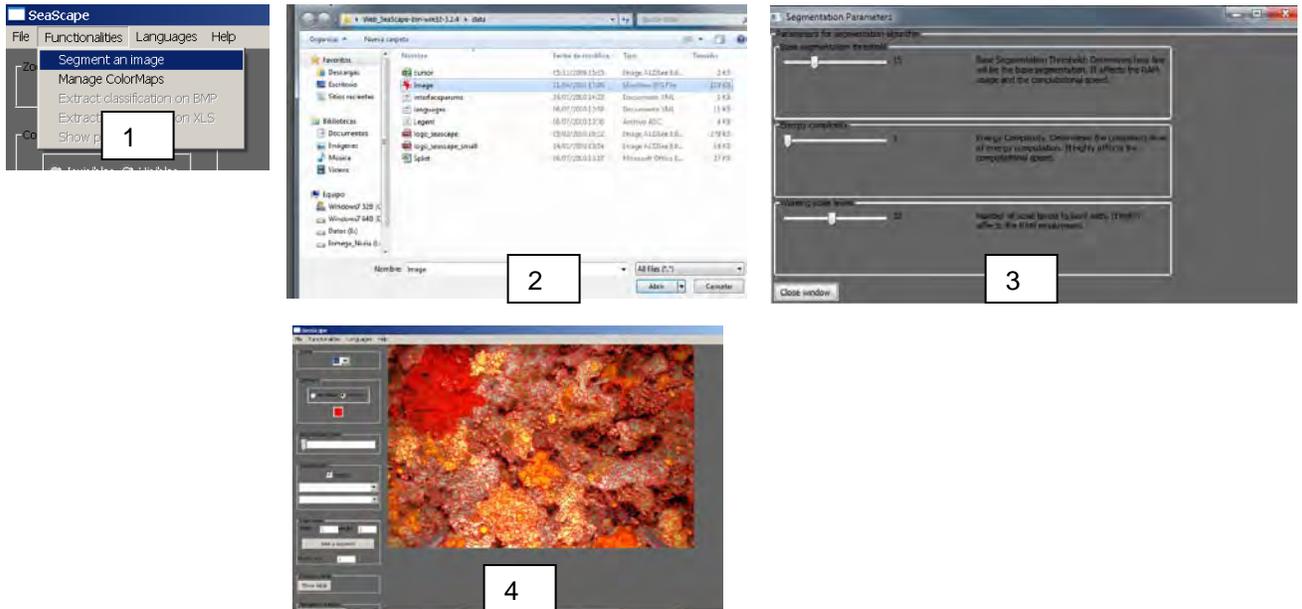
Undo modifications on ColorMap  
Save ColorMap Load ColorMap

Description

- 1) Select Functionalities>Manage ColorMaps
- 2) Double-click in the color cell. Select the color for each species
- 3) Save the legend for further analysis

- Once it is saved, the user can load it

### 3) To import and segment an image



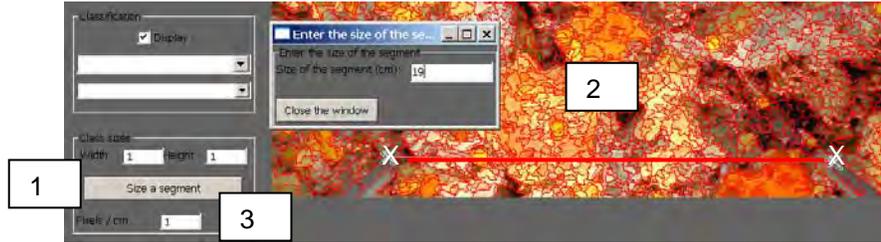
#### Description

- 1) Select Functionalities>Segment an image
- 2) A dialog window will pop-up, choose the image to be analyzed. It is mandatory that the image file has to be located in "Data" directory.
- 3) A dialog window will pop-up, requiring to set the value for three segmentation parameters: Threshold, Energy complexity, Working scale levels. We recommend working with the default values. Close Window to start the segmentation process.
- 4) Result of the segmentation process with the finest level of segmentation.

#### RAM requirements:

SeaScape needs RAM memory to segment the images. We highly recommend working with images with intermediate number of pixels (e.g. approximately 1000\* 900 pixels) and the default segmentation values (e.g. Working scale levels of 10). It is more relevant to have a standard image of 1000\*900 pixels, to choose a working scale levels of 10-15 (meaning 10-15 intermediate images) and to adjust dynamically the optimal level of segmentation rather than to have a large image (3347\*2276 pixels) with a working scale of 3-5

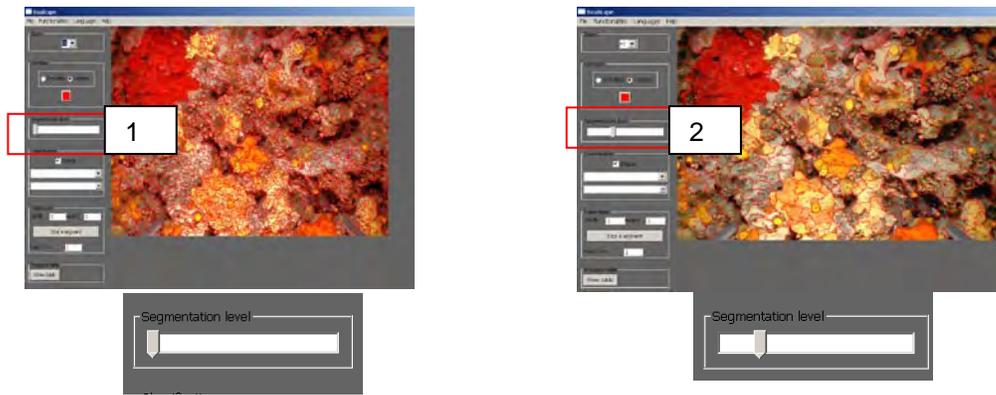
#### 4) To specify image scaling



#### Description

- 1) Click Size a segment. Then click one point and after the second point.
- 2) A window will pop-up requiring the user to enter the distance spanned (in cm) by the points. Close the window and the scaling resolution will be calculated.  
or
- 3) The user can directly indicate the known number of pixels/cm

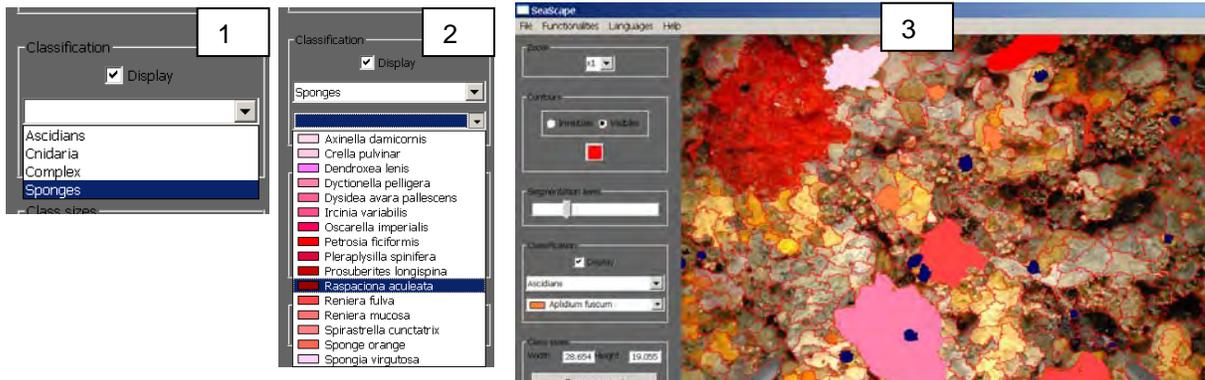
#### 5) To choose a segmentation level. This is a dynamic procedure.



#### Description

- 1) It is highly recommendable to change the segmentation level in function of the image complexity. This is a dynamical procedure.
- 2) To change the segmentation scale, just move the slider at the segmentation level desired at the "Segmentation level" section.

## 6) To label the regions.

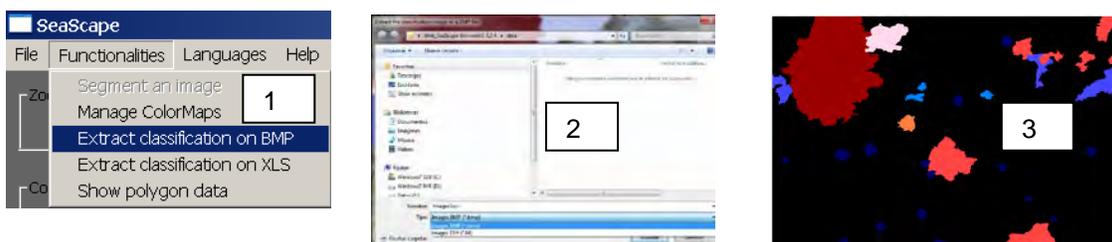


### Description

- 1) To calculate areas of selected regions, select a group from the first drop list of the Classification section.
- 2) Then, the user selects the species name to be labeled from the second drop list.
- 3) Once the species is selected, the user can go to the segmented image and label the region.

- If the user simply clicks on a point with the left button of the mouse, the region encompassing that point will be labeled.
- If the user holds the left button of the mouse down and move the cursor around the region, a line will be drawn following the path. Once you release the mouse button, all the regions will be labeled
- If the user needs to un-label a region, just press the right button of the mouse over the interested region and it will be un-labeled.

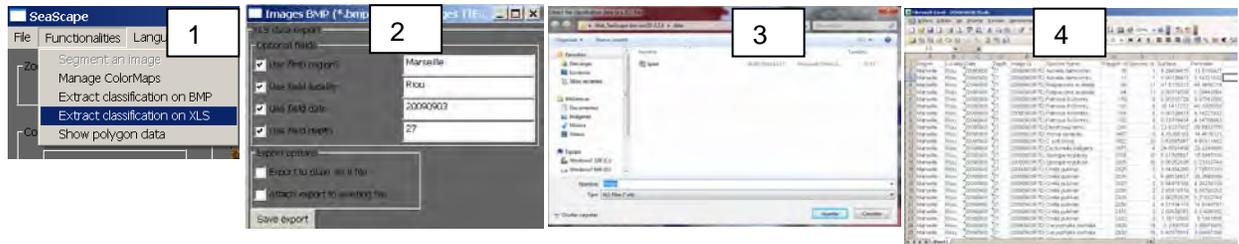
## 7) To extract the classification to tiff or bitmap files



### Description

- 1) Select Functionalities>Extract classification on BMP
- 2) A window dialog will pop-up requiring the user to browse the path and enter the filename. The user can save it as bitmap or tiff files. By default, files will be save in the "Data directory".
- 3) Labeled polygons will present the previous selected color, whereas regions not labeled will appear in black.

8) To extract the classification to Excel files.



#### Description

- 1) Select Functionalities>Extract classification on XLS.
- 2) A window dialog will pop-up, the user can choose the optional fields containing information of region, locality, date, and depth. The user can also choose to export the data to ASCII file or choose to export the data to an existing Excel file for statistical analysis (e.g. all the data from several images of the same transect in the same file).
- 3) After clicking Save export button, a window dialog will pop-up requiring to browse the path and to enter the filename. By default, the Excel file will have the same name as the image file.
- 4) Overview of the data in Excel files. The data is automatically assembled into an Excel spreadsheet containing information on Image id, Species name, Polygon id, Species id, Surface (cm<sup>2</sup>) and Perimeter (cm).