

ECOTAXA

FIRST STEPS

Quantitative Imagery Plateform of Villefranche sur Mer (PIQv)

Elineau

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1. Main page

The screenshot shows the EcoTaxa main page. At the top left is the logo "EcoTaxa 5". A yellow banner at the top center reads: "Message from the application manager", "EcoTaxa now offers Deep Learning features within the usual Random Forest classification !", and "Videos of the last training (2017/01/16) are available :". Below the banner is a large image of various planktonic organisms. Four numbered circles point to specific elements: 1 points to the main image; 2 points to the "Explore Images" button; 3 points to the "Contribute to a project" button; and 4 points to the "Action" button in the top right corner.

EcoTaxa is a web application dedicated to the visual exploration and the taxonomic annotation of images that illustrate the beauty of planktonic biodiversity.

Observatoire Océanologique de Villefranche-sur-Mer

Station Biologique de Roscoff

Oceanomics

partner University Fund

As a visitor, you have free access to the specimens that have been already identified by taxonomist experts. You can explore the database by navigating along the UniEuk taxonomic tree which aims at unifying taxonomic names and tree according to reliable and curated molecular phylogenies. It encompasses the whole Eukaryotic and Prokaryotic lineages [Viruses coming soon] that have been molecularly described. Then images can be filtered according to several simple criterial: geographic location, depth, date and time of sampling, and imaging instrument.

Explore Images

Contribute to a project

If you use EcoTaxa in your work, we would appreciate that:

- you cite it as: Picheral M, Colin S, Iriksen J-O (2017). EcoTaxa, a tool for the taxonomic classification of images. <http://ecotaxa.obs-vlfr.fr>.
- you consider setting aside some funds in your next grant to support its maintenance and development. Contact us to estimate what would be both reasonable and useful.

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Disclaimer: If you annotate images in EcoTaxa you cannot claim for any retribution from the application managers but you can then download and use the results of your work. The managers of the EcoTaxa application are not liable for the safekeeping of the images and associated data it holds, even if they make their best to keep the application stable and secure.

- 1 Video Tutorial
- 2 Explore images

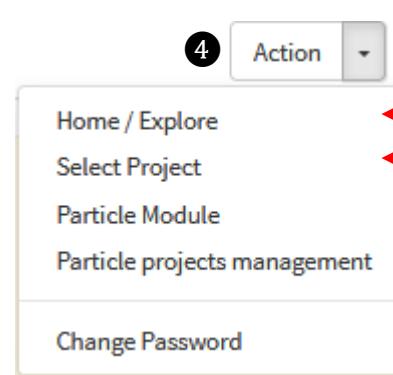
- no need to have an account to access to this function

- 3 Contribute to a project

- need to have an account to access to this function

- 4 "Action" button

- 5 Shortcut to the main page



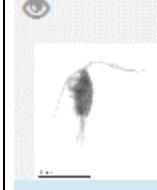
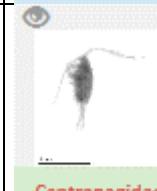
= Main page
= Contribute to a project

2. Glossary

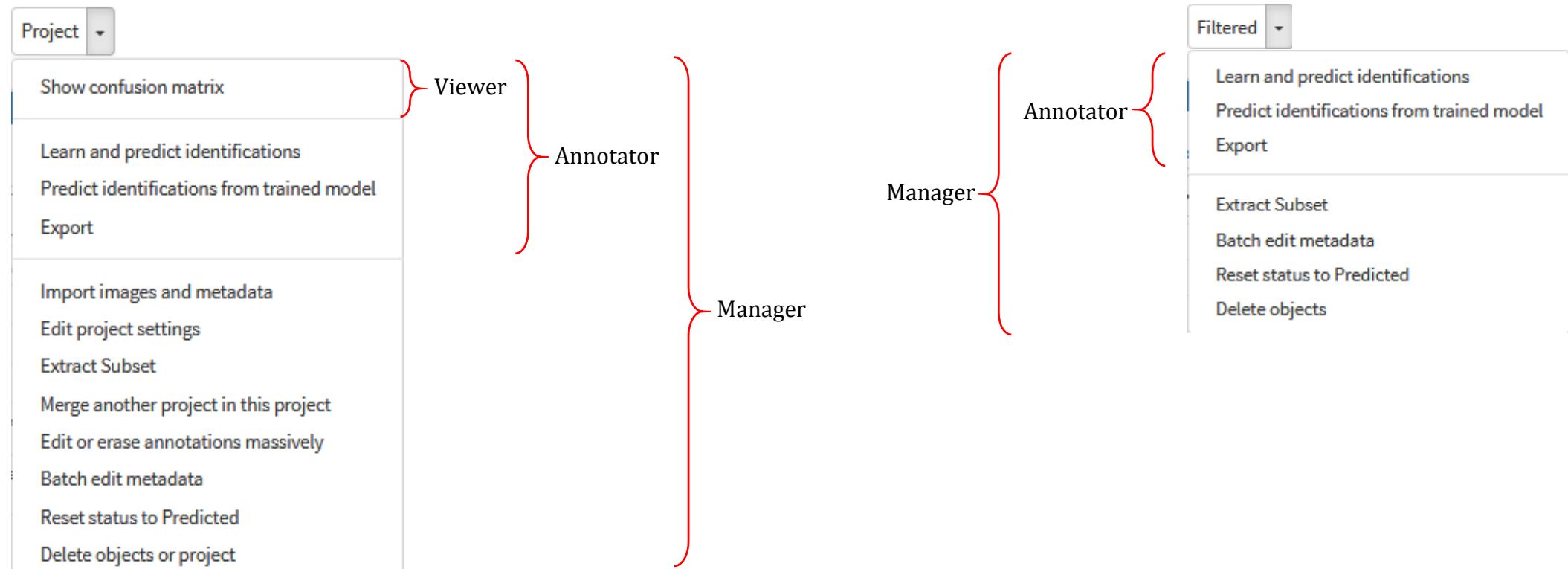
2.1 How is built an Ecotaxa window?



2.2 Status of images

Status of the images	Action	Status color	
Unclassified	Image just uploaded into the project		All = Unclassified + Predicted + Validated + Dubious Not Validated = Unclassified + Predicted + Dubious Classified = Predicted + Validated + Dubious
Predicted	Image just predicted by learning		
Validation in process	Image not yet validated		
Validated	Image validated		
Dubious	Image classified in dubious		

2.3 The different rights according to the accounts



3. Explore images page

Viewing a batch of validated images taken randomly from all projects (around 1000 images) hosted on Ecotaxa.

3.1 Filters bar

The screenshot shows the 'Filters bar' on the Ecotaxa platform. It includes sections for Project, Sample, Depth, Location, Date, Time, Instrument, and Validated Plankton filter, each with specific input fields and buttons like 'Clear', 'Advanced', and 'Share page'. A red box highlights the top section with buttons for 'Update view & apply filters', 'Clear filters', and 'Share page'. A red bracket on the right side groups the 'Validated Plankton filter' section and the bottom-most checkbox.

- Click on this button to apply the filters selected on the Image page (see below)
- Clear all the filters selected (see below)
- Allows to share the page with your applied filters (also works for a recipient without Ecotaxa account)
- Allows to select a specific project in all projects hosted on Ecotaxa
- Allows to select several samples in the project selected
- Allows to select one specific sample in the project selected
- Allows to select all the images depending to a depth interval of sampling
- Allows to select all the images depending to a specific area of sampling
- Allows to select all the images depending to a date interval of sampling
- Allows to select all the images depending to a specific month of sampling
- Allows to select all the images depending to a time interval of sampling
- Allows to select all the images depending to a specific time of sampling
- Allows to select all the images depending to a specific instrument/Click on the question mark to see the list
- Allows to select all the images depending to a specific taxa by writing the name
- Allows to select all the images depending to a specific taxa selected + all his children when checked
- Allows to select all the images depending to a specific taxa using the tree of life

NB: Some filters can be combined

3.2 Topper bar



Shortcut to the main page

3.3 Toolbar



Click on this button to apply the requested changes about number of images, magnification and the magnifying glass

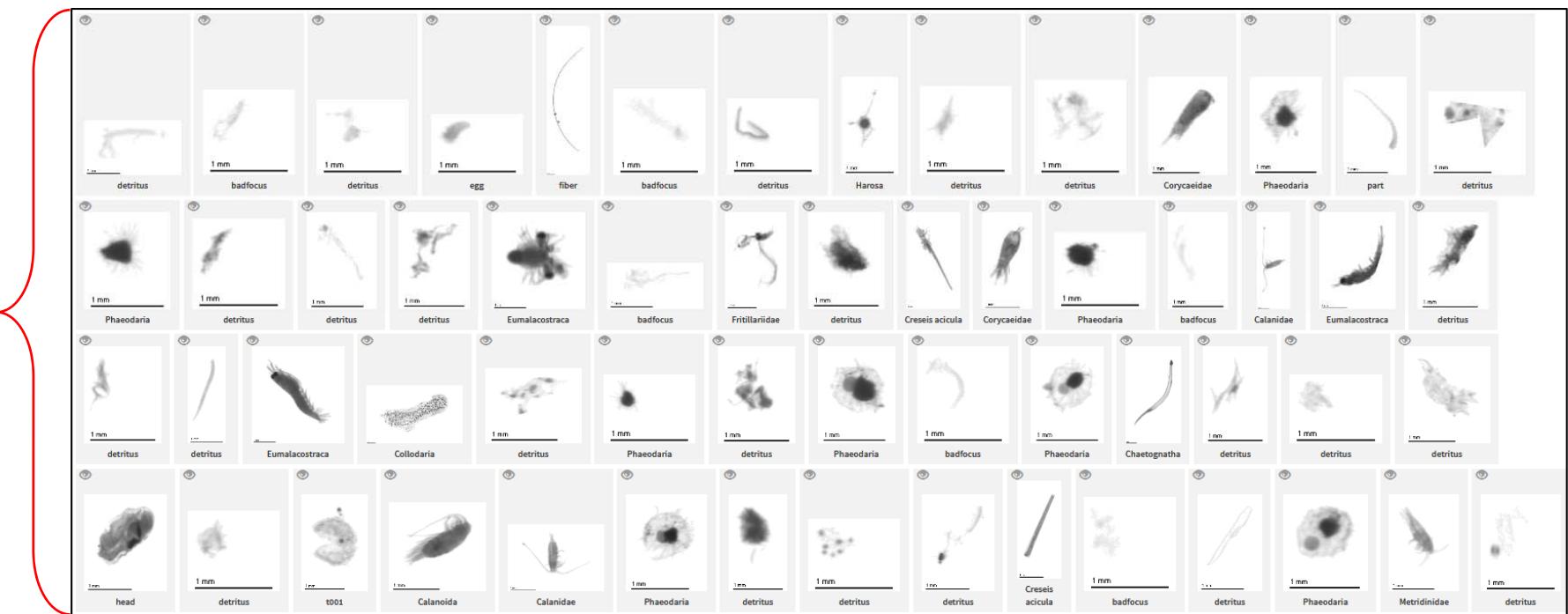
Allows to select the number of images that will appear

Allows to select the magnification of the images

When checked, apply a magnifying glass when you go over an image with the mouse pointer

3.4 Image page

Result of the selected filters



4. Contribute to a project page

Select a project

How to create a project ⓘ

How to prepare data ⓘ

Create a new project

You must be the manager of at least one project to have permission to create new projects

Number ID of the project into Ecotaxa

	Title [ID]	Status	Nb objects	% validated	% classified
Select	Zooscan point B Judy Bogorov 300 2012 [163] Amanda Elineau	Annotate	19153	84.34	100.00
Select	Zooscan point B Judy Bogorov 300 2013 [164] Amanda Elineau	Annotate	24398	12.75	100.00
Select	Zooscan point B Judy Bogorov 300 2014 [165] Amanda Elineau	Annotate	41405	16.37	100.00
Select	Zooscan point B Judy Bogorov 300 2015 [127] Amanda Elineau	Annotate	23330	100.00	100.00
Select	Zooscan point B Judy Bogorov 300 2016 [16] Amanda Elineau	Annotate	20530	100.00	100.00
Select	Zooscan point B Judy Bogorov 300 2017 [335] Corinne Desnos	Annotate	25542	100.00	100.00
Select	Zooscan point B Judy Bogorov 300 2018 [757] Corinne Desnos	Annotate	31514	95.90	95.90
Select	Zooscan point B Judy Bogorov 300 2018 journée [758] Corinne Desnos	Annotate	22831	95.02	95.02

Show projects in which you are not registered

Manager name of the project, you can send an email by clicking on the name

See chapter 4.1

See chapter 2.2

Total number of objects: all statuses combined

% of objects with the validated status

% of objects with the validated + predicted + dubious status

4.1 Access to the whole list of projects hosted into Ecotaxa

By clicking on the View button, you can access to the project with a viewer status (see chapter 2.3 and 4.3.1.1)

Other projects		Title [ID]	Status	Nb objects	% validated	% classified
REQUEST ACCESS	View	[690] Yoshiyuki Abe	Annotate	0	0.00	0.00
REQUEST ACCESS	View	1_Learning_set_mn_lrg [466] Rainer Kiko	Annotate	13737	99.94	100.00
REQUEST ACCESS	View	1_Learning_set_mn_med [465] Rainer Kiko	Annotate	14637	100.00	100.00
REQUEST ACCESS	View	1_Learning_set_mn_sml [848] Rainer Kiko	Annotate	26927	100.00	100.00
REQUEST ACCESS	View	1_learning_set_UVP [499] Rainer Kiko	Annotate	31196	100.00	100.00
REQUEST ACCESS	View	2017-02-26_01_07_51.420 [765] Alessandra Gomes	Annotate	4	0.00	100.00
REQUEST ACCESS	View	20181018 [1352] chang tan	Annotate	0	0.00	0.00
REQUEST ACCESS	View	2_uvp5_learning_set_extension [970] Rainer Kiko	Annotate	47224	26.50	100.00
REQUEST ACCESS	View	_Modele_Zooscan [1040] Laetitia Jalaber	Annotate	1456758	100.00	100.00
REQUEST ACCESS	View	ACIDD IFCB - UCSB [915] Sasha Kramer	Annotate	0	0.00	0.00

See chapter 4.2.1.1

See chapter 2.2

Total number of objects: all statuses combined	% of objects with the validated status	% of objects with the classified status
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Manager name of the project, you can send an email by clicking on the name

By clicking on the Request Access button, you will send an automatic email to the manager of the project to ask an access

4.2 How to prepare my new project?

At this step you already have created your project and named it (see chapter 4 > “Create a new project” button).

4.2.1 Edit project settings (for a manager account)

“Project button” > “Edit project settings” tool

4.2.1.1 Status of the project and privileges

Access button to invite new users to work on
your project (see chapter 2.3)

The screenshot shows a form titled "Edit project # 582 - Edit privileges only". It includes fields for "Project Title" (Myproject), "Visible for all visitors (only validated objects)" (checkbox checked), "Status" (dropdown menu set to "Annotate"), and "Project Description" (text area). A red arrow points from the "Visible for all visitors" checkbox to the explanatory text below it. Another red arrow points from the "Status" dropdown to the explanatory text below it. A third red arrow points from the "Project Description" text area to the explanatory text below it. A fourth red arrow points from the "Project Title" field to the explanatory text above it.

When it's selected, you give the access to
your project to all the users of Ecotaxa like
a viewer. A button “VIEW” will appear
to the list of the projects (see chapter 4.1)

You can change the status of your project
(column status > see chapter 4.1):

- Annotate: You open the annotation/prediction to your project
- ExploreOnly: You block the annotation/prediction to your project (it will also impact users with annotation rights)
- Annotate No Prediction: you open the annotation but block the prediction

To give more information about your project

4.2.1.2 Taxonomy filter

You can create a list of classification before starting the prediction/annotation. It gives a logical meaning to your list.

If you miss this step, the categories will be classify by alphabetic order and will make the classification more difficult.

Step 1: Fill in the taxonomy field

Step 2: The ID of your taxonomy categories will appear (you can COPY/PASTE this list of IDs between different projects)

Step 3: The Taxonomy filter will be modified automatically

The screenshot shows the EcoTaxa 1.5 software interface. At the top, there is a 'Definition of preset for manual sorting' section with a text input containing '11514,25828,45074,45072,61990,62005,61996'. Below this, a list of taxonomy categories is shown with checkboxes: Acartiidae (Calanoida), Calanoida (Copepoda), Centropagidae (Calanoida), Chaetognatha (Metazoa), Copepoda (Maxillopoda), Cyclopoida (Copepoda), and Oithonidae (Cyclopoida). A red dashed arrow points from this list down to the 'Taxonomy filter' section in the main interface.

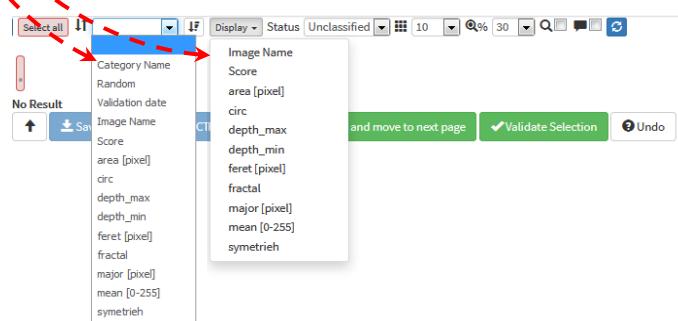
The main interface shows a 'Myproject (-/0)' title bar. Below it is a toolbar with 'Update view & apply filter', 'Select all', sorting icons, 'Display', 'Status All', '100', search, and other buttons. The 'Taxonomy filter' tab is selected in the top navigation. The left sidebar lists taxonomy categories with their counts: Chaetognatha (Metazoa) [0], Copepoda (Maxillopoda) [0], Calanoida (Copepoda) [0], Acartiidae (Calanoida) [0], Centropagidae (Calanoida) [0], Cyclopoida (Copepoda) [0], and Oithonidae (Cyclopoida) [0]. A red dashed arrow points from the 'No Result' message in the center to the taxonomy list in the sidebar.

At the bottom, there are buttons for 'Save pending changes [CTRL+S]', 'Validate all and move to next page', 'Validate Selection', and 'Undo'. There are also buttons for 'Reset Counts' and 'Hide empty categories'.

4.2.1.3 Tools

Fields available for sorting & Display In the manual classification page	depth_min=depth_min depth_max=depth_max area=area [pixel] mean=mean [0-255] fractal=fractal major=major [pixel] symetrie=symetrie circ.=circ. feret = Feret [pixel]
Fields displayed in image popover in the manual classification page	depth_min=depth_min depth_max=depth_max area=area [pixel] mean=mean [0-255] fractal=fractal major=major [pixel] symetrie=symetrie circ.=circ. feret = Feret [pixel]

By filling in these fields, you will add more tools for classification assistance. This list corresponds to the variables that you have imported into the tsv tables.



You have to select the SCN corresponding to your instrument to benefit from the use of the Deep learning.

4.3 My project

4.3.1 Topper bar

Shortcut to the main page

Project name

Number of images in your project depending of the status (see chapter 2.2)

Total number of objects: all statuses combined

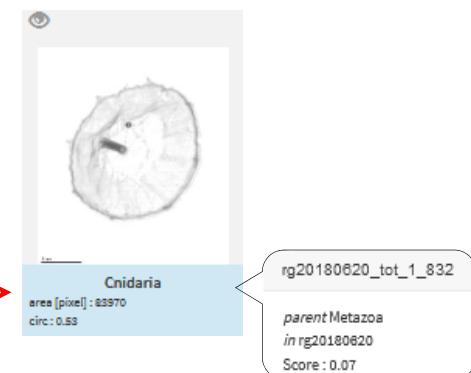


Tools that you can use on the project as a whole

Tools that you can use after applying filters

The color bar shows the progress of your project

4.3.2 Toolbar



Allows to filter your images according to variables in ascending/descending order (see chapter 4.2.1.3)

Allows to filter your images according to the status (see chapter 2.2)

Allows to select the number of images/page that will appear

When checked, apply a magnifying glass when you go over an image with the mouse pointer

Allows to size the images on the page

4.3.3 Other filters

Update view & apply filter

Taxonomy filter Other filters

Share page

Sample Advanced Clear

Sample

Depth ⓘ Clear

Min [m] Max [m]

Location Clear

West North East
South

Open map

Date Clear

Begin
End
Month

Time invert Clear

Begin End

Day time

Instrument ⓘ Clear

Instrument

Annotator / Free filters Clear

Annotator

Num. field

Text field contains

See chapter 3.1

Allows to select all the images depending to a specific annotator

Allows to select all the images depending to specific variables from Object details

Allows to select all the images depending to specific variables from Sample/Acquisition/Processing details

Allows to save your selected filters

Apply your selected filters even if you disconnect from Ecotaxa