

GlobalHAB symposium on automated in situ observations of plankton
Fiskebäckskil, Sweden 22-27 August 2022

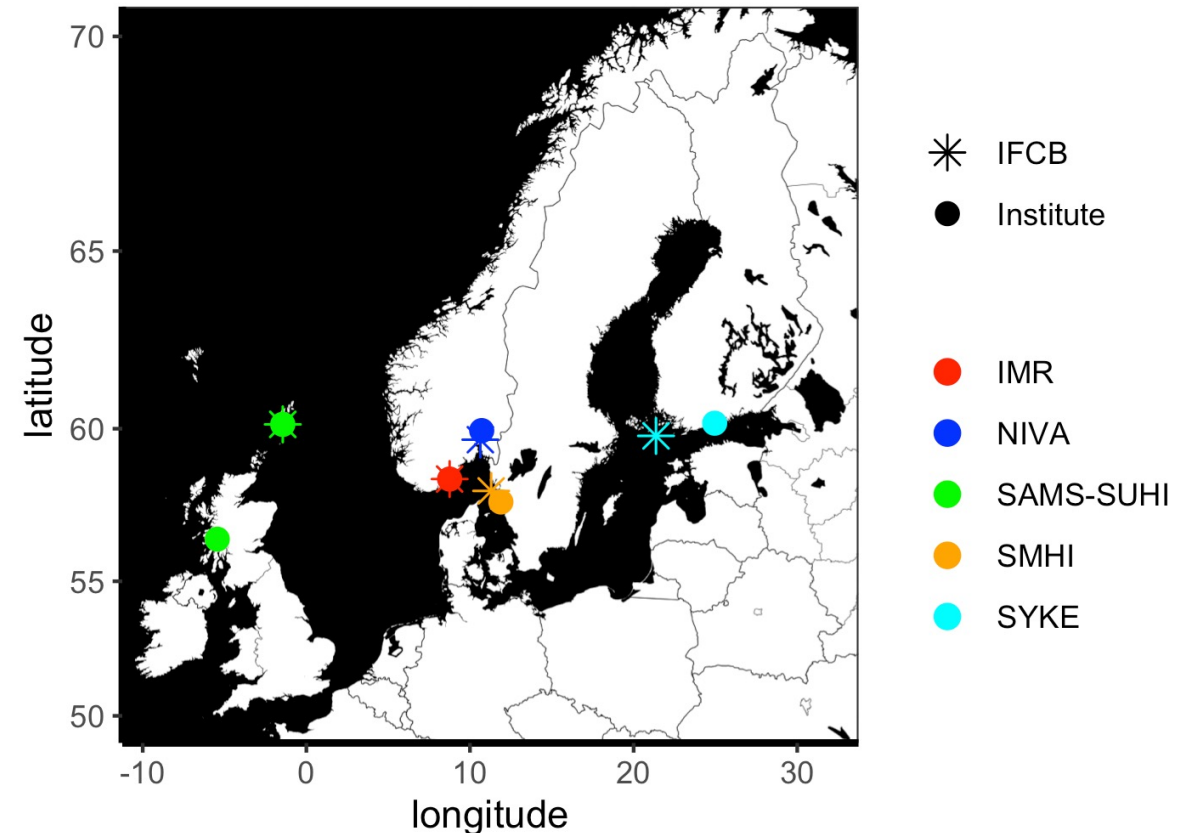
SMHI

**THE EUROPEAN IFCB NETWORK
AND SHARING OF ANNOTATED
IMAGES FOR CLASSIFIER
DEVELOPMENT USING
[HTTP://NORDICMICROALGAE.ORG](http://nordicmicroalgae.org)**

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European IFCB network


- Started in 2020
- Video conferences approximately every 2 months
- Main aim is to promote collaboration and to share experiences and annotated images(?)
- New instruments
 - Germany
 - Italy
 - France









EuroGOOS Biological Working Group BLOWG

- Established 1 October 2021
- One of the objectives is to establish best practices for automated plankton observations - imaging systems
- Virtual meetings
- Meeting in person in autumn 2022?

About us ▾ News and Events ▾ Documents ▾ Ocean models and member products catalogues ▾ EuroGOOS Best Practices


 EuroGOOS
European Global Ocean Observing System

 Members  Regions  Working groups  Task Teams  EU Projects  Ocean Literacy

EuroGOOS > Biological Observations Working Group (BLOWG)

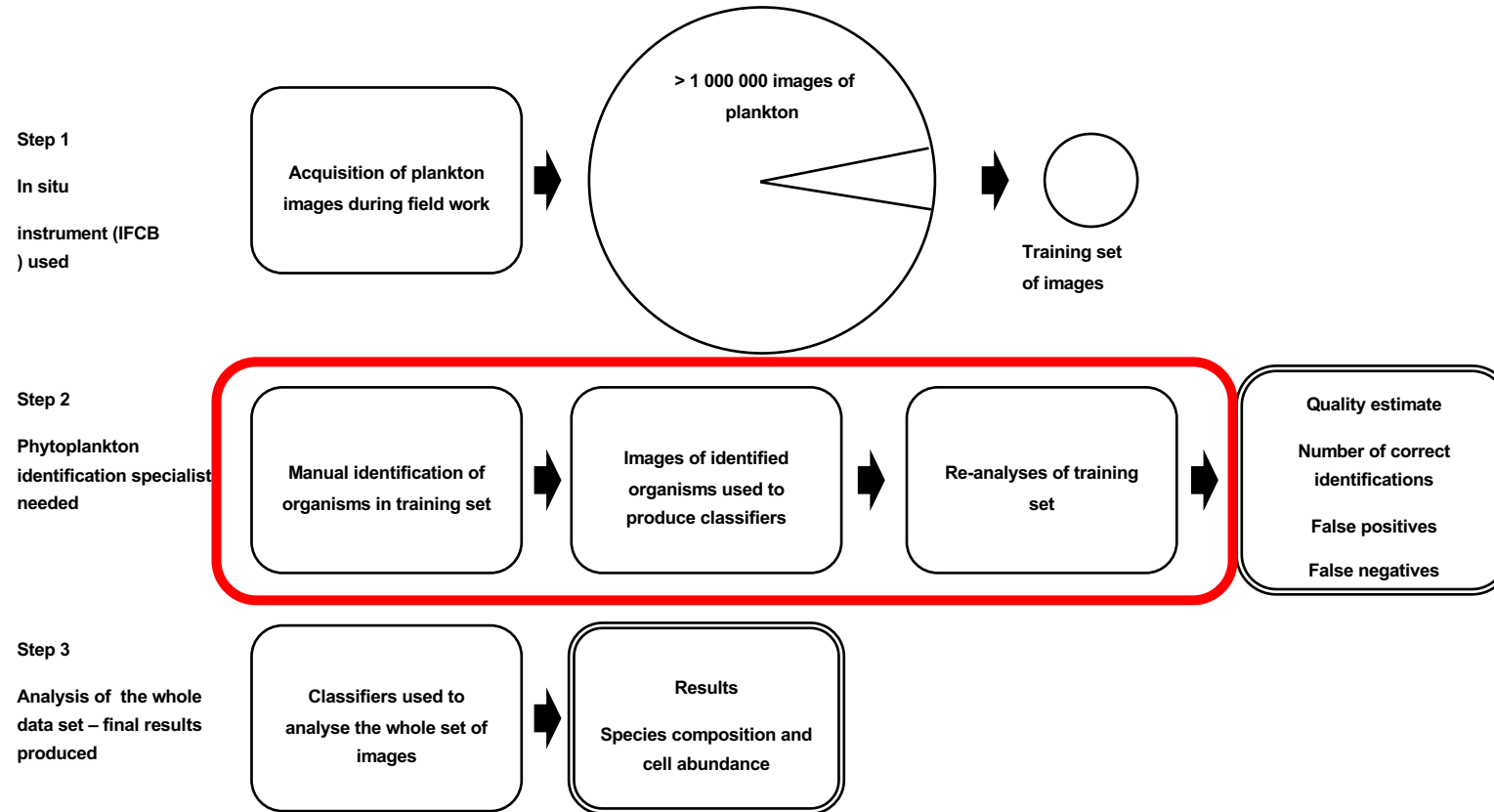
Biological Observations Working Group (BLOWG)

The EuroGOOS Biological Observations Working Group (BLOWG) works to better integrate biological observation into the EuroGOOS framework. They will contribute to the EuroGOOS 2030 strategy and aims to achieve a cultural change in biological observation from individual efforts into an integrated, and coordinated European effort with global impact to further our understanding of life in the ocean and how it interacts with and influences the environment.



<https://eurogoos.eu/biological-observations-working-group/>

Data flow and production of classifiers



Nordic Microalgae web site and database

- New version coming very soon
 - Phylogeny/taxonomic tree from WoRMS
- Launched in 2011
- Original web site from 1996 - Checklist of phytoplankton in the Kattegat and the Skagerrak
- Long term financial support from Swedish Research Council
- Part of Swedish Biodiversity Data Infrastructure - SBDI

The screenshot shows the homepage of the Nordic Microalgae website. At the top, the title "Nordic Microalgae and aquatic protozoa" is displayed, along with "LOG IN | REGISTER" on the right. A navigation menu includes "HOME", "QUICK VIEW", "TAXON TREE", "GALLERIES", "FORUM", "CHECKLISTS", "TOOLS", "CONTACT", "ABOUT", and "HELP". A search bar labeled "Taxon search" is on the right. Below the menu, there are links for "Introduction", "Latest images", "Hall of fame", "How to contribute", "Partners", "NOMP", "HELCOM-PEG", "Links", and "Literature". The main content area features an "Introduction" section with a row of flags representing Nordic countries and a link to a smartphone version: "Visit version for smartphones and tablets: m.nordicmicroalgae.org". A "Welcome to Nordic Microalgae" section follows, with a paragraph describing the site's purpose and two images of microalgae. Below this is a "Latest added illustrations" section with three entries: "Lessardia elongata" (Jan 21, 2022, Maria Karlberg), "Coelastrum reticulatum" (Jan 7, 2022, Birger Skjelbred, NIVA), and "Coelastrum sphaericum" (Jan 7, 2022, Birger Skjelbred, NIVA). On the right side, there are two boxes: "RECENT NEWS" with three news items and a "News archive" link, and "STATISTICS" showing: "Number of species: 4486", "Number of taxa: 6599", "Number of images: 2307", "Number of videos: 1", and "Number of contributors: 80".

Nordic Microalgae web site and database

- Content contributed by users
- Currently 2307 images, most from microscopy
- Includes link to free software Plankton Toolbox
 - Useful for analysing phytoplankton samples using microscopy and analysing data
 - No programming skills needed

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The screenshot shows the "Tools" page of the Nordic Microalgae website. The header is identical to the homepage. The "Tools" section features the "PlanktonToolbox" logo and a description: "The Plankton Toolbox is a free tool for aquatic scientists, and others, working with environmental monitoring related to phyto- and zooplankton. It is available for MacOS and Windows. A Linux version will be produced upon request." Below this, a "Features include:" list is provided:

- Imports phyto- or zooplankton data in .txt and .xlsx files in different formats (configurable)
- Work with data on abundance, biovolume and carbon content
- Data screening - quality control of data
- Aggregate data, e.g. from species level to class level
- Plotting tools
- Statistics (in early development)
- Export data in .txt or .xlsx for further analyses or plotting
- Plankton counter - use the PlanktonToolbox as a counting tool by the microscope

 At the bottom, a paragraph states: "The software is available as version 1.3.4 for Windows and Mac OSX. The new release includes an update of the counting module and several minor tweaks. In addition the NOMP 2021 biovolume list, which includes information from the HELCOM-PEG 2021 biovolume list and additional taxa from the Skagerrak and the North Sea, is included in Plankton Toolbox 1.3.4. The list of potentially harmful taxa has been updated according to the IOC-UNESCO Taxonomic Reference List of Harmful Micro Algae."

Annotated images in Nordic Microalgae

- Aim -sharing of annotated images among phytoplankton identification experts world wide
- Support several types of instruments, today
 - IFCB
 - CytoSense
 - FlowCam (different types)
- Registered users can upload annotated images
- Upload zip-package containing hundreds or thousands of images

Upload images

The screenshot displays the 'nua administration' dashboard. At the top, a dark header contains the site name 'nua administration' on the left and user information 'WELCOME, **BENGT**. [VIEW SITE](#) / [CHANGE PASSWORD](#) / [LOG OUT](#)' on the right. Below the header, the main content area is titled 'Site administration'. On the left, a 'MEDIA' section is highlighted, containing two items: 'Image libraries' and 'Images'. Each item has a '+ Add' button in green and a 'Change' button with a pencil icon in blue. On the right, a 'Recent actions' section is visible, titled 'My actions', which lists three actions: a successful '+ ImageLibrary object (2)' addition, a failed 'x ImageLibrary object (1)' deletion, and another successful '+ ImageLibrary object (1)' addition, all within the 'Image library' context.

nua administration WELCOME, **BENGT**. [VIEW SITE](#) / [CHANGE PASSWORD](#) / [LOG OUT](#)

Site administration

MEDIA

[Image libraries](#) + Add [Change](#)

[Images](#) + Add [Change](#)

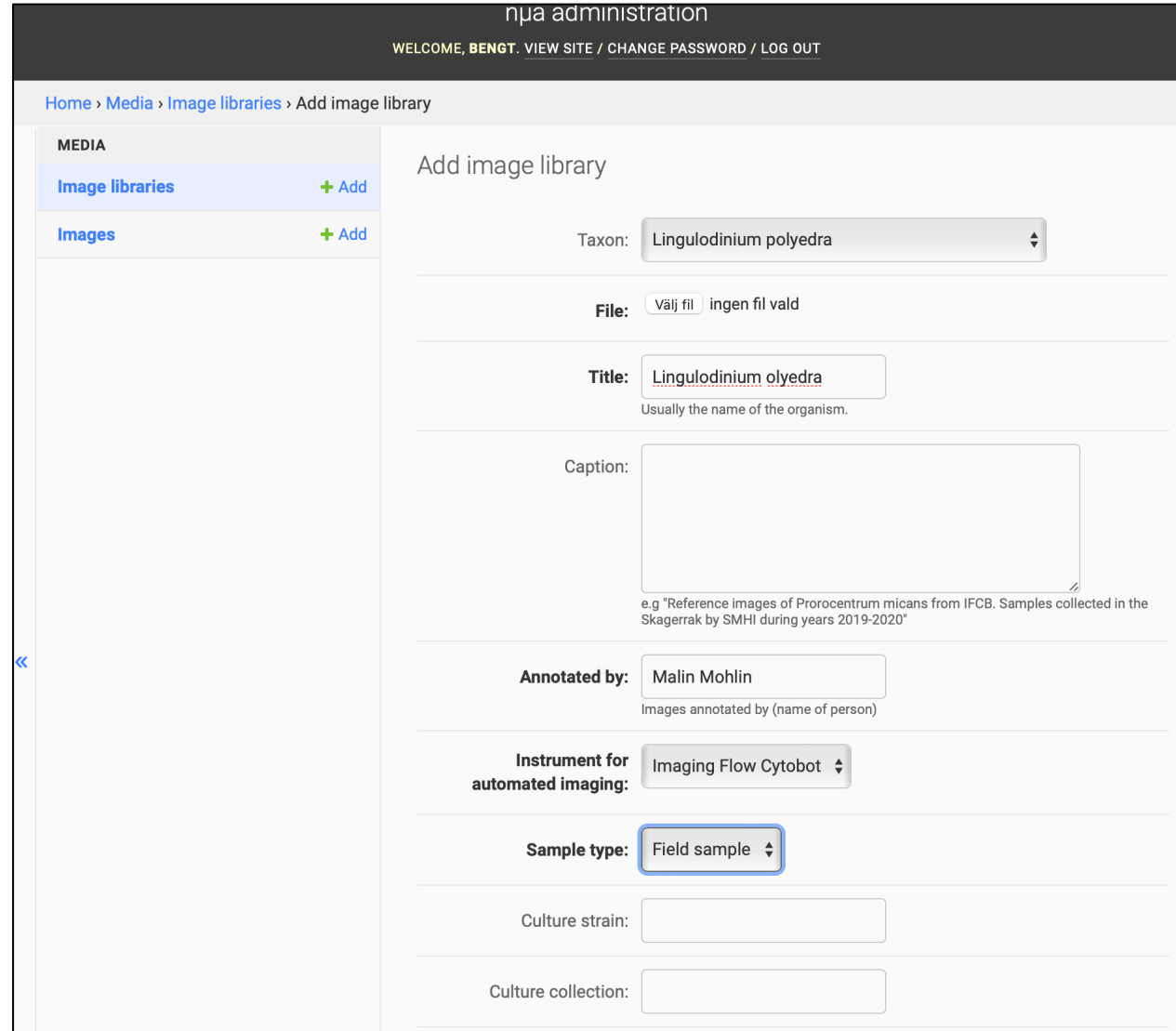
Recent actions

My actions

- + ImageLibrary object (2)
Image library
- x ImageLibrary object (1)
Image library
- + ImageLibrary object (1)
Image library

Upload images

1. Place annotated images in one folder
2. Compress folder to zip-file
3. Log into web site
4. Add Image library
5. Enter meta data (save metadata as template)
6. Upload



nja administration
WELCOME, BENGT. VIEW SITE / CHANGE PASSWORD / LOG OUT

Home > Media > Image libraries > Add image library

MEDIA
Image libraries + Add
Images + Add

Add image library

Taxon:

File: ingen fil vald

Title:
Usually the name of the organism.

Caption:
e.g "Reference images of Prorocentrum micans from IFCB. Samples collected in the Skagerrak by SMHI during years 2019-2020"

Annotated by:
Images annotated by (name of person)

Instrument for automated imaging:

Sample type:

Culture strain:

Culture collection:

Example of view of annotated images

nja frontend

localhost:8080/taxon/Alexandrium_pseudogonyaulax/?arc=alexandrium-pseudogonyaulax-3

HOME QUICK VIEW TAXON TREE GALLERIES CHECKLISTS TOOLS CONTACT ABOUT HELP

Alexandrium pseudogonyaulax
(Biecheler) Horiguchi ex K.Yuki & Y.Fukuyo, 1992

Alexandrium pseudogonyaulax Alexandrium pseudogonyaulax

REFERENCE LIBRARIES

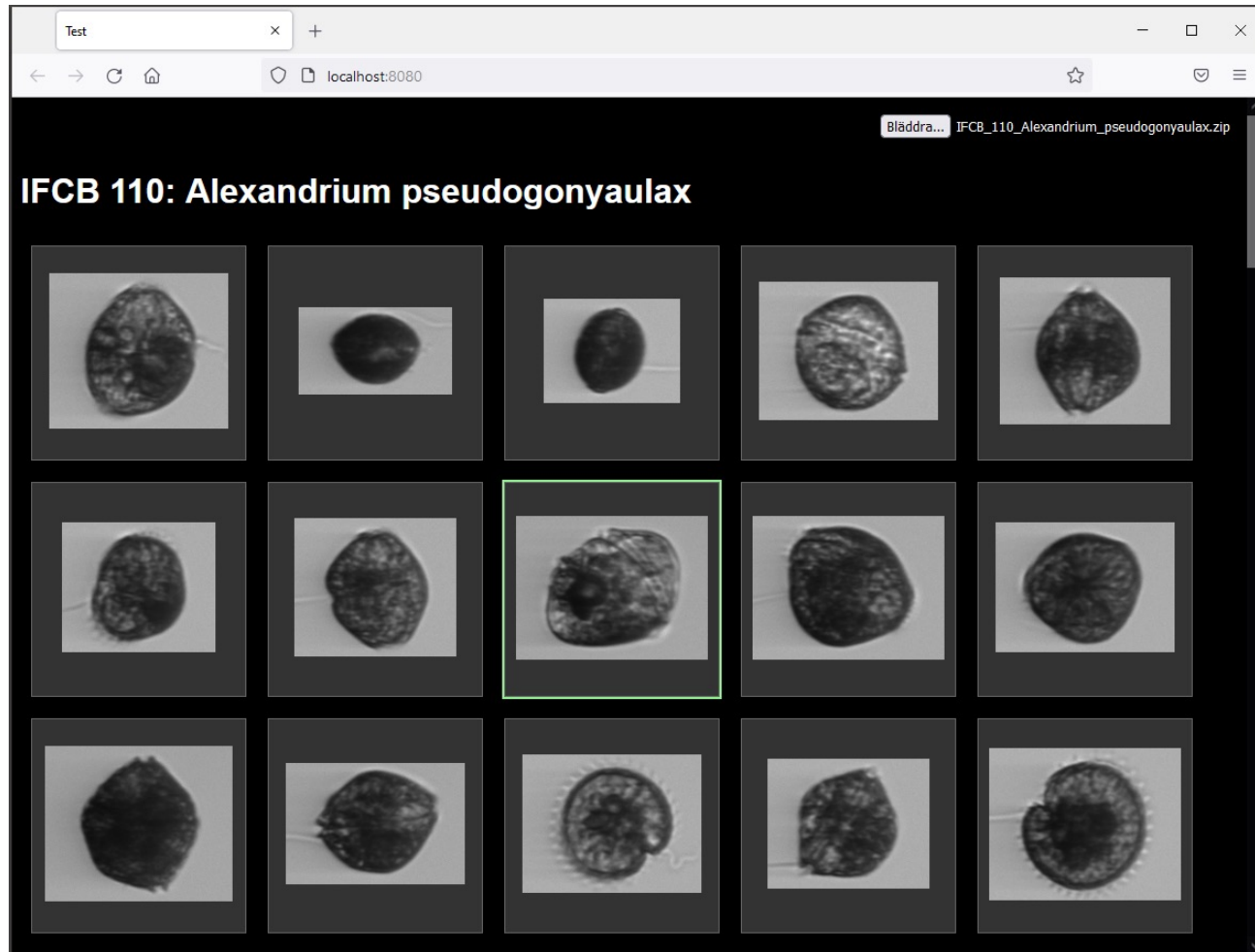
IFCB Alexandrium pseudogonyaulax

Title	IFCB Alexandrium pseudogonyaulax
Photographer/artist	IFCB
Institute	SMHI
Contributor	Test
License	Creative Commons Attribution-NoDerivs 3.0 Unported

[Download as ZIP-archive](#)

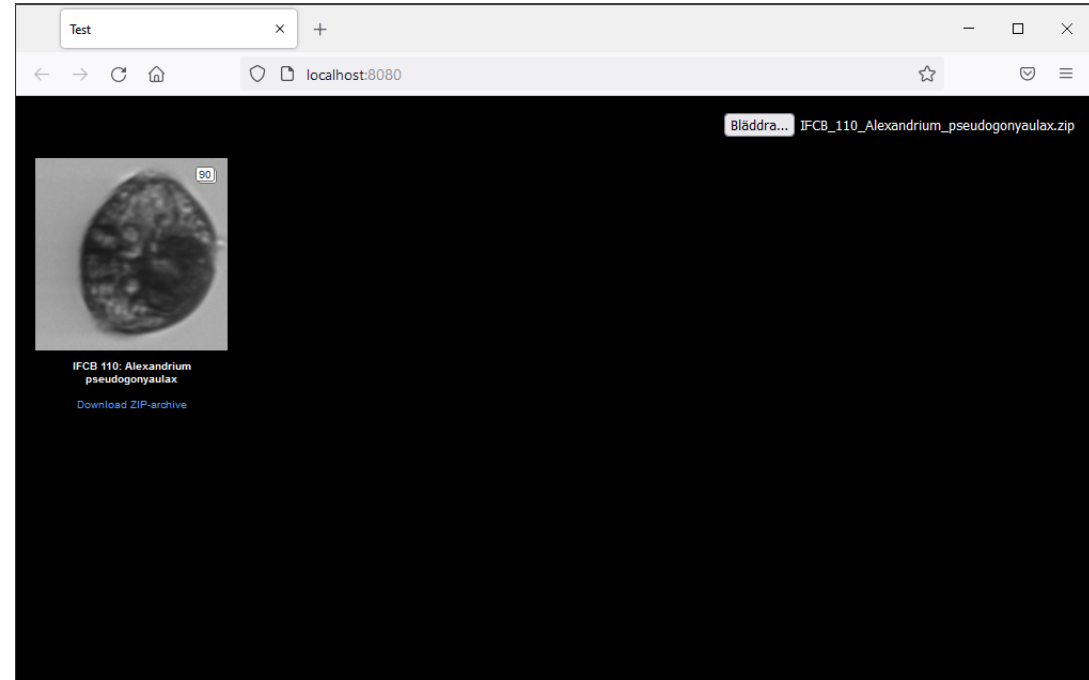
Alexandrium pseudogonyaulax

Another view of annotated images



Download annotated images as zip-file

- Free data
- Images in database
- Download images selected based on several criteria
 - select images uploaded by one or several persons
 - Select images based on geographic area
 - Etc.
- Meta data follows images - described in standardised text file



improve your classifiers

Acknowledgements

- Swedish Research Council - Research Infrastructure
- (Vetenskapsrådet - forskningsinfrastruktur)
 - Lifewatch
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