PlutoF user manual

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PlutoF

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Introduction

PlutoF platform has been designed for storing and managing biodiversity data over the web. PlutoF provides database and computing services for the taxonomical, ecological, phylogenetical, etc. research. The purpose of the platform is to provide synergy through common modules for the classifications, taxon names, analytical tools, etc.

In addition to storing diverse biodiversity data there are also various supporting services that are accessible in all modules (Figure 1).
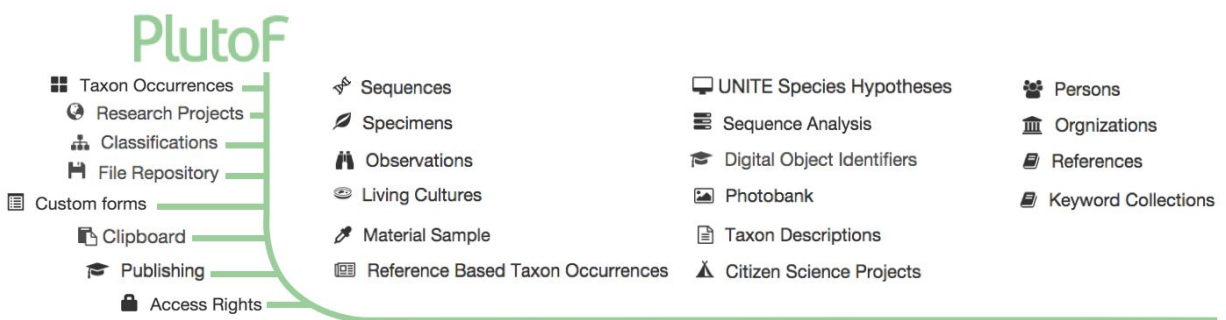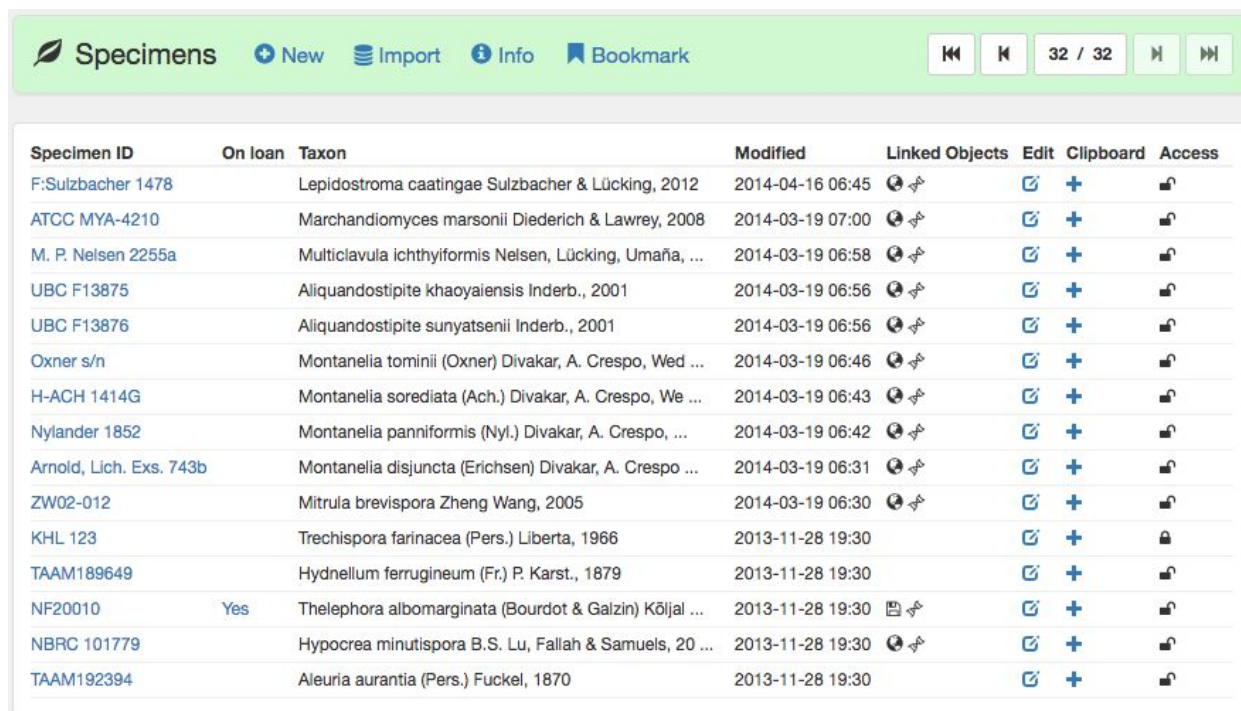

Figure 1. Supporting services and modules of PlutoF. Base services (on the left) are accessible in all modules.

In the following chapters of this manual we give an overview of PlutoF modules, workbench structure, map functions, advanced searches, and various supporting services.

List view

When opening a specific module there is a list of user's own records ordered by time last modified (Figure 2). By default 20 latest records are displayed, older records can be accessed using arrows on the navigation bar. Navigation bar also includes links to add new record, open info window, open import module, bookmark this page, and simple search box for searching all public records in the same module. Search results are returned to the user on search module results page (see chapter "Search module") allowing the user to specify additional search parameters for more specific search.

Specimen ID	On loan	Taxon	Modified	Linked Objects	Edit	Clipboard	Access
F:Sulzbacher 1478		Lepidostroma caatingae Sulzbacher & Lücking, 2012	2014-04-16 06:45			+	
ATCC MYA-4210		Marchandiomyces marsonii Diederich & Lawrey, 2008	2014-03-19 07:00			+	
M. P. Nelsen 2255a		Multiclavula ichthyiformis Nelsen, Lücking, Umaña, ...	2014-03-19 06:58			+	
UBC F13875		Aliquandostipite khaoyaiensis Inderb., 2001	2014-03-19 06:56			+	
UBC F13876		Aliquandostipite sunyatsenii Inderb., 2001	2014-03-19 06:56			+	
Oxner s/n		Montanelia tominii (Oxner) Divakar, A. Crespo, Wed ...	2014-03-19 06:46			+	
H-ACH 1414G		Montanelia sorediata (Ach.) Divakar, A. Crespo, We ...	2014-03-19 06:43			+	
Nylander 1852		Montanelia panniformis (Nyl.) Divakar, A. Crespo, ...	2014-03-19 06:42			+	
Arnold, Lich. Exs. 743b		Montanelia disjuncta (Erichsen) Divakar, A. Crespo ...	2014-03-19 06:31			+	
ZW02-012		Mitrula brevispora Zheng Wang, 2005	2014-03-19 06:30			+	
KHL 123		Trechispora farinacea (Pers.) Liberta, 1966	2013-11-28 19:30			+	
TAAM189649		Hydnellum ferrugineum (Fr.) P. Karst., 1879	2013-11-28 19:30			+	
NF20010	Yes	Thelephora albomarginata (Bourdot & Galzin) Kõljal ...	2013-11-28 19:30			+	
NBRC 101779		Hypocrea minutispora B.S. Lu, Fallah & Samuels, 20 ...	2013-11-28 19:30			+	
TAAM192394		Aleuria aurantia (Pers.) Fuckel, 1870	2013-11-28 19:30			+	

Figure 2. List view for specimen module.

Views

Workbench views are differentiated by background colors for navigation bar (Figure 3) –
· Green – list view with first 20 user's own records is displayed
· Yellow – adding new record or updating existing one
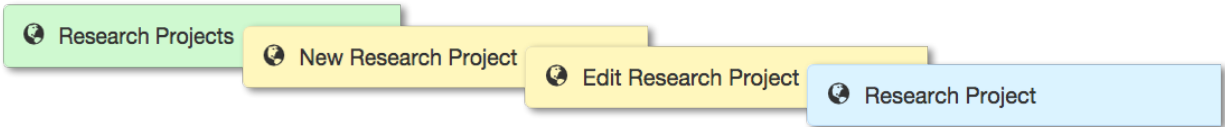· Blue – detail view for specific record

Figure 3. Different views of the workbench.

Navigation bar also includes links to specific actions (*New, Edit, Delete, Clone, Link to, Moderate, Bookmark, Clipboard, Download, Reset, Save Search, Info, Back*).

Panels

Data fields describing the record are grouped into panels (Figure 4). Presence of different panels depends on the module. Panels in object's detail view are open only if there are data fields filled by the user, panels can be opened and closed by clicking on panel headers. Some panels may also include links for various actions inside the panel (*New, Edit*).
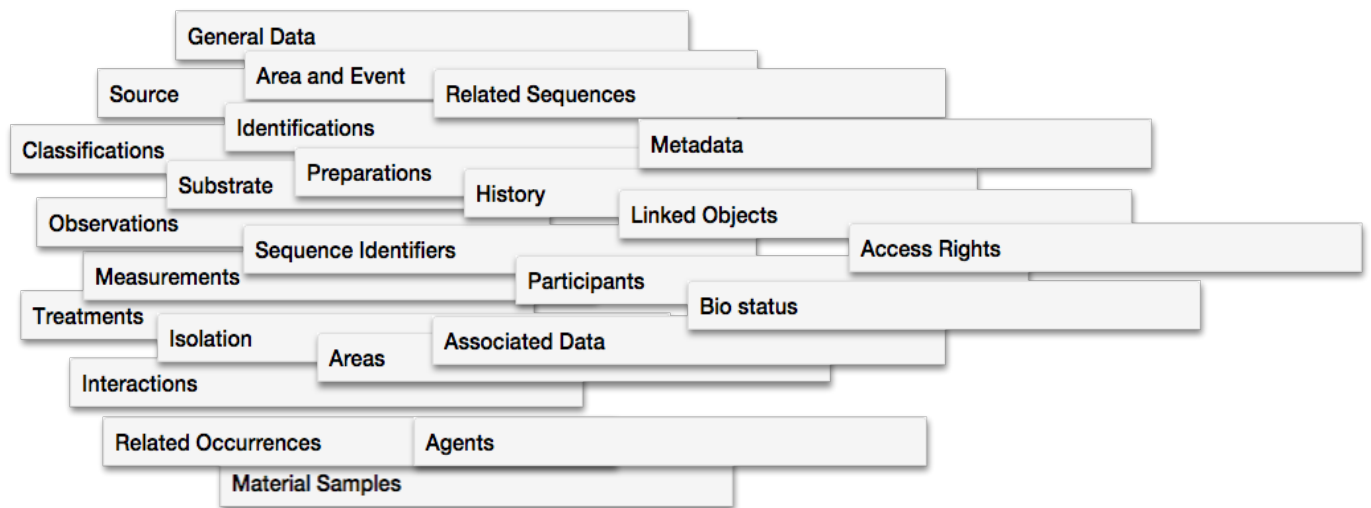
Figure 4. List of available panels.

Map

Map view is uniform across the workbench but possible actions on the map depend on specific view. For example drawing a point or polygon is only allowed inside "New", "Edit", and "Search module" forms. List of possible actions on the map are described below.
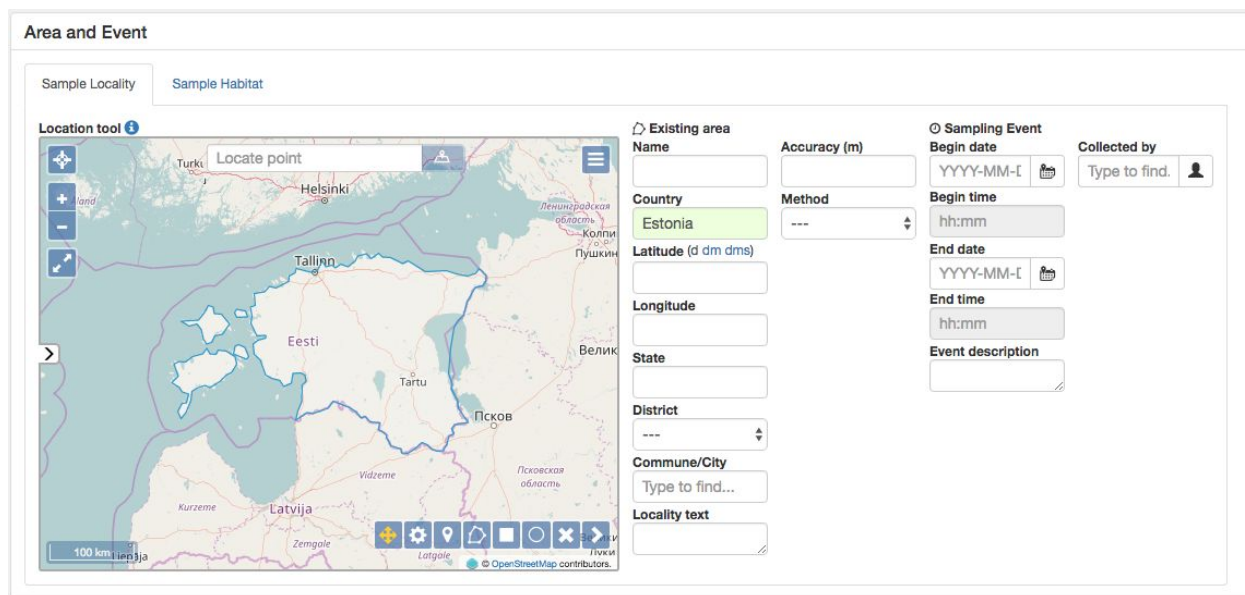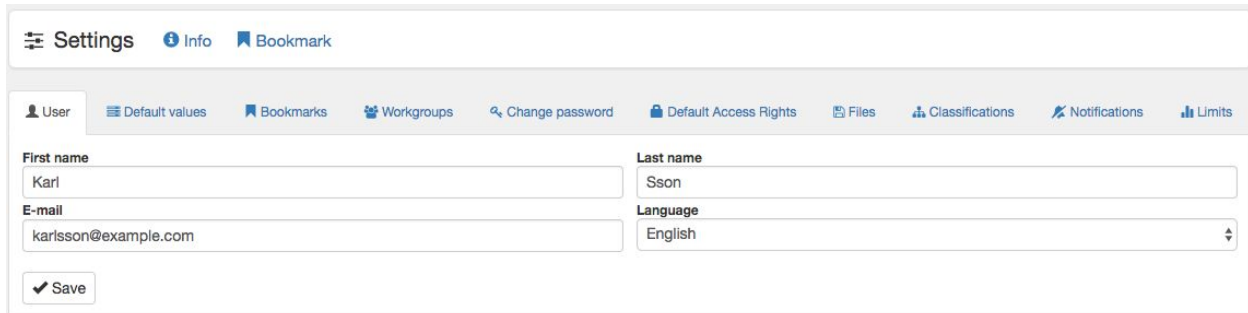

Figure 5. Map view inside record's add form.

- Open project/site tab for linking records to project and/or site (⟩)
- Start: position yourself (✣) or search by pasted geo-coordinates (Locate point ⬆)
- If possible, locality fields are filled automatically
- Pre-filled fields can be edited manually later
- Views: default, full screen (⤢)
- Base maps and layers (☰)
- Tools: open/close tools (⟩), move (✣), edit marker (⚙), add point/country (◉), draw polygon (⬠), draw box (☐), draw circle (◯), clear map (✖)
- Shortcuts: closing the polygon (double click), select multiple (Shift + choose area/point), zooming in specific area (✣ , Shift + draw), zooming in point (scrolling mouse)

Account Settings

Account settings can be customized by opening "Settings" page on the main menu (Figure 6).

Figure 6. User account settings page.

On this page the following settings can be customized -

- Basic user info and default values - set preferred language, default map, project, input forms, organization and personal info;
- Bookmarks - view and delete bookmarks and saved searches;
- Workgroups - create, manage, join and leave workgroups;
- Change password;
- Default access rights - access rights set in this panel will be applied to all records user adds throughout PlutoF. These can be changed during the adding/editing process;
- Files - set default rights statement, license type, rights owner and creators for your uploaded files;
- Classifications - define preferred habitat and taxon classifications. Unnecessary classifications will not be shown in your input forms;
- Notifications - system notifications sent by email can be turned off here;
- Limits - clipboard usage and file repository storage used is shown here. By default, all users have clipboard limit of 1,000 records - this limit can be increased as needed by contacting us at support@plutof.ut.ee.

Search module

Different search parameters and filters can be combined in search module. Search begins in page header (Figure 7) where user can specify search string in search box or enter directly to search module by clicking search link in the main menu.
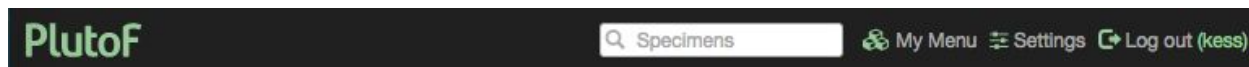

Figure 7. Search box in page header.

Search results will be displayed in search module (Figure 8) where additional search filters can be added. Detailed list of actions that can be applied to search results are given below.

Figure 8. Search module.

- Search results can be displayed on the map (Map view , assumes the presence of geoinfo)
- Search results can be displayed in gallery (Image view , assumes the presence of images)
- Graphical views of the search results can be browsed in statistics tab (Statistics)
- Search results can be sorted (↑ ↓) by clicking on the arrows next to column labels
- List of returned and displayed fields can be customized (⚙)
- Search results can be sent to Clipboard (🗋 - send all records on current page, 🗋* - send all search results, ✚ - send one record)

- Additional filters for search are available (Filters ▾) and can be combined (incl. taxon name, time, location and measurements)
- In taxon occurrence searches "Top results" lists (e.g. top taxa, top countries, etc.) are presented - list items are clickable and act as appended search filters when clicked.

File Repository

File repository list view (Figure 9) displays user's own records with linked records (e.g. specimens, observations), file size, direct links to edit file metadata, file download, delete button, and file permissions shown. By default the first 20 objects are displayed, older records can be accessed using arrows on the navigation bar.

Figure 9. List view of file repository.

Navigation bar includes simple search box searching over all public files. Search results will be displayed in search module where more complicated search queries can be formed. Files can be linked to other PlutoF records using the "Associated Data" panel either inside file's or associated record's add and edit forms.

Files can be uploaded into repository in two different ways (Figure 10) – directly from file repository's list view (New , Upload) or inside "Associated Data" panel (Upload).

Figure 10. Different possibilities for uploading files on the workbench.

Bookmarks

Bookmarks can be added by clicking the *Bookmark* link inside navigation bar and giving it a name. Bookmarks can be viewed and deleted by opening their list-view using either 1) My Menu (My Menu) or 2) by opening "Bookmarks" tab on "Settings" page (Figure 11).
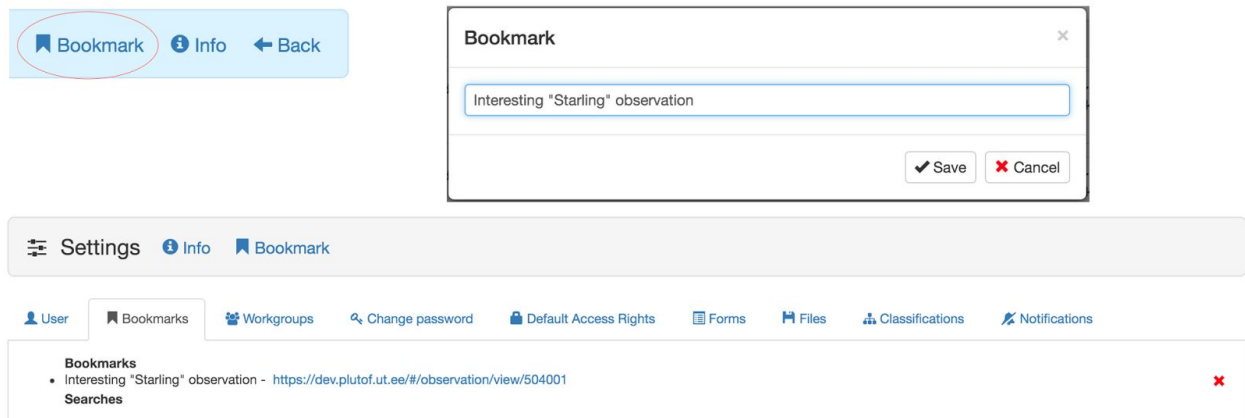

Figure 11. Adding and viewing Bookmarks.

Saving Searches

Search queries can be bookmarked similar to workbench pages. For saving a search, user must click on the *Save search* link inside search module and give it a name (Figure 12). Saved searches can be viewed and deleted using either 1) My Menu (My Menu) or 2) by opening "Bookmarks" tab on "Settings" page.
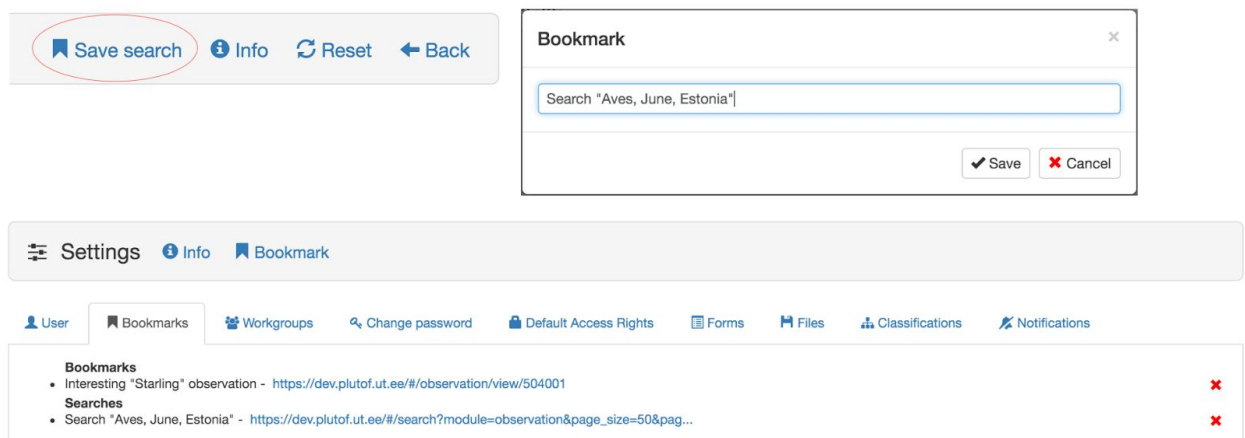

Figure 12. Saving and viewing bookmarked search queries.

My Menu

My Menu can be opened by clicking blocks icon on top right corner of all pages (Figure 13), and it includes shortcuts to various actions on the workbench –

- Bookmarks and saved searches
- Keyword search
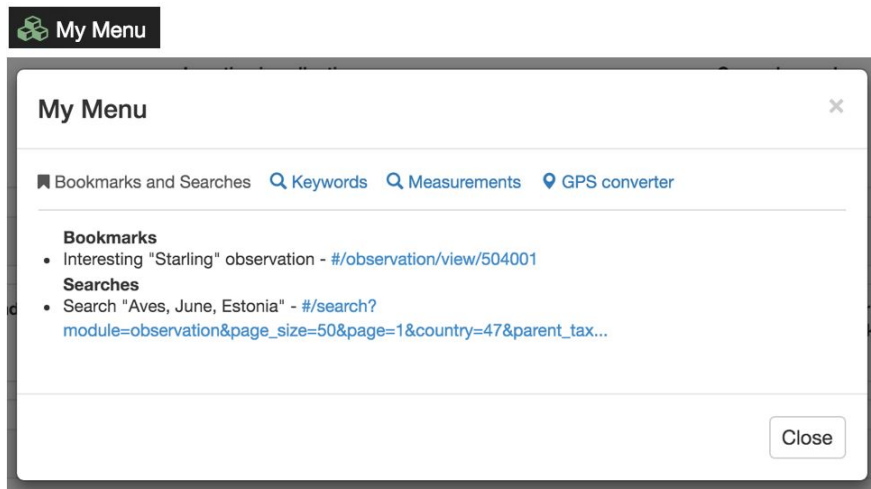- Searching form elements (measurements)
- GPS converter

Figure 13. Helper Tool.

Clipboard

Clipboard (Figure 14) allows creating user-specific object lists to be used in bulk operations (for example, exporting records to CSV file, showing on the map, printing labels, or editing access rights).
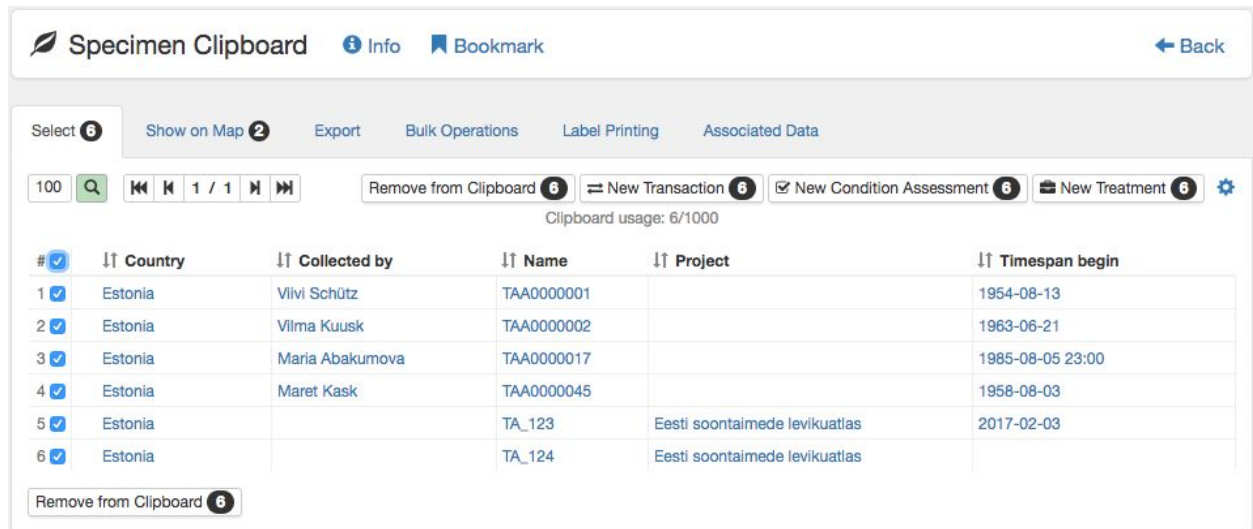

Figure 14. Specimen clipboard view.

Clipboard functionality depends on the type of objects –

1. **Specimens** – showing on the map, data export (CSV, species list, Darwin Core Archive), printing specimen labels (PDF), batch operations (updating sampling area, sampling event, general data, access rights). Selected specimen records can be sent to Collection Lab to initiate the creation of new collection transactions, condition assessments and treatments;

2. **DNA sequences** – showing on the map, data export (CSV, FASTA, species list, GenBank Submission), batch operations (updating sampling area, sampling event, general data, access rights);

3. **Observations** – showing on the map, data export (CSV, species list, Darwin Core Archive), batch operations (updating sampling area, sampling event, general data, access rights);

4. **Photobank items** – showing on the map, batch operations (updating sampling area, sampling event, general data, access rights);

5. **Living specimens** – showing on the map, data export (CSV, species list, Darwin Core Archive), printing specimen labels (PDF), batch operations (updating sampling area, sampling event, general data, access rights).

Records can be sent to clipboard from records' list-view, detail-view and search results.

NB! By default, all users have clipboard limit of 1,000 records - this limit can be increased as needed by contacting us at support@plutof.ut.ee.