A CRASH INTRODUCTION TO IUCN'S SPECIES INFORMATION SERVICE (SIS) SYSTEM

Version 1.0
February 2009

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Please note that this is a working document subject to changes and additions; all future versions will be given a new version number.

What is SIS?

In its broadest sense, IUCN's Species Information Service (SIS) is an informatics tool that allows authorized users to update and make changes to the information contained in the IUCN species database. This database is at the core of the IUCN Red List of Threatened Species, from which all published species assessments originate. SIS is also a relational system, where all information is linked to species assessments, both historical and current ones.

SIS is designed to work both online and offline, the latter option providing users with the capacity to work on species assessments in instances where internet connections may not readily be available or stable. However, some things are best done online rather than offline. For example, it is possible to add new species to SIS both online and offline, but species deletions should be done online.

SIS can be used for both Global and Regional Assessments; however, note that SIS does not have the ability of merging Regional Assessments.

Browser requirements

SIS runs on any of these browsers:

- Apple Safari
- Firefox 3
- Google Chrome

Internet Explorer does not use the same standards as the browsers listed above, so this browser should not be used.

For any of the three browsers listed above, do not use the toolbar buttons, such as the back and forth arrows – press F11 to remove these buttons, this will take SIS into a full-screen mode.

If using Firefox, a useful add-on that can be downloaded is **ABCtajpu** (https://addons.mozilla.org/en-US/firefox/addon/459). This add-on allows for the addition of diacritics within SIS/Firefox. Once installed, go to Tools>Options in the Firefox toolbar to access a pop-up keyboard with special symbols. Other useful Firefox add-ons include dictionaries in different languages (see https://addons.mozilla.org/en-US/firefox/browse/type:3).

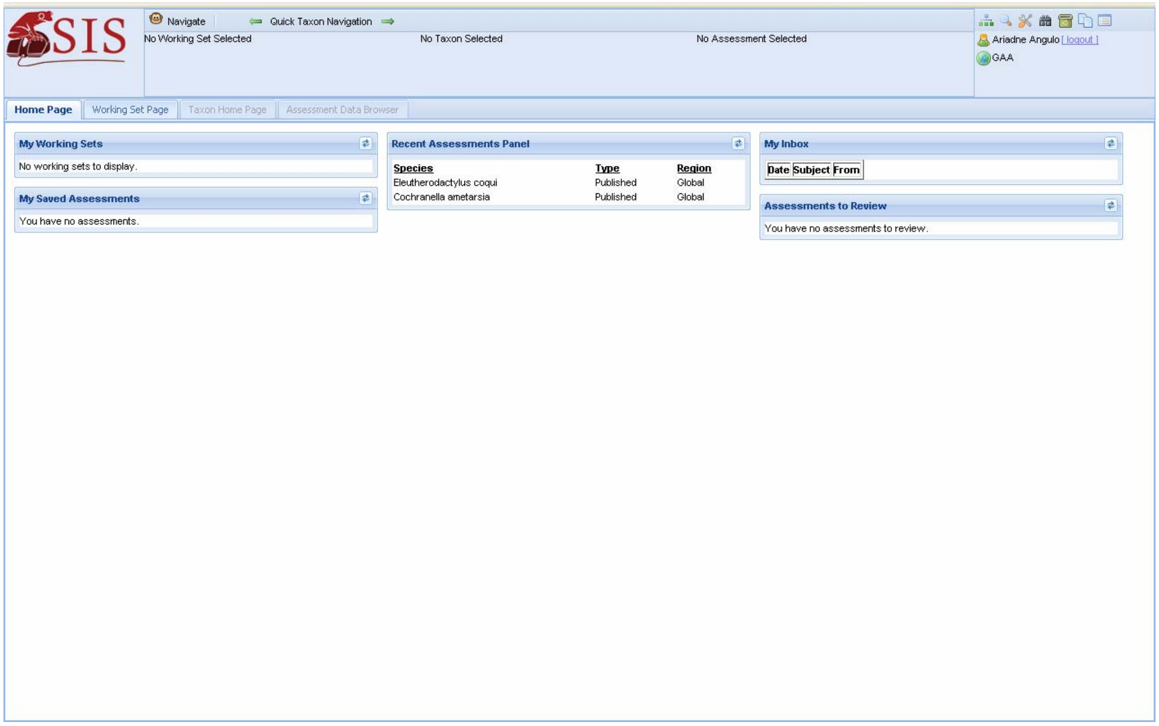
The login pages for both the SIS test site and the actual SIS site can be found at:

http://sistest.iucnsis.org/SIS/index.html
http://sis.iucnsis.org/SIS/index.html

Changes in the SIS test site will be saved but will not affect the information currently on SIS; however, any change effected in the SIS site will be saved and will affect assessments appearing on the next update of the Red List web site and whatever analyses are conducted thereafter. Therefore, **if there is anything you are unsure about when working in SIS, it is very important to try the actions you want to do on the test site first**. Then if any unexpected outcomes occur, you will not have changed anything on the live site.

The SIS Interface

To log into SIS, each user needs to be assigned a username and a password. Currently, this is done by contacting Jim Ragle at IUCN HQ (email: james.ragle@iucn.org). When logging in (your username is likely to be your email account, the default password provided is “changeme”- you can later change your password to another one of your choice), the SIS Toolkit will be uploaded and you will be shown a default page that looks something like this:



The main SIS page is divided into five parts:

1. The Navigation toolbar (top, monkey face icon next to the frog on the mouse)
2. The "Search" toolbar, to the right of the Navigation toolbar, which has several tools in addition to searches
3. Working Sets and Saved Assessments panes, on the left side of the page
4. Recent Assessments pane, at the centre of the page
5. Inbox and Assessments to review, on the right side of the page

The Navigation toolbar shows what species/working set is selected, and the left and right green arrows allow us to navigate through the taxa in a working set.

The "Search" toolbar allows users to do a number of things: browse through a taxonomic hierarchy, search a taxon by scientific or common name, and a number of other functions (e.g. Import/Export, Trash, Batch change) that are currently restricted to administrative users.

Note: when searching for a taxon by common name, please note that common names are set as plural and that the search will find every instance where some part of the name is used, even if it is not in the same taxonomic group.

The My Working Sets pane lists the existing working sets that a user has set up and saved. Clicking on the curvy green arrow next to a working set will take the user to the Summary tab of the selected Working Set Page, which displays administrative information (e.g. name, manager, date created, etc.) on the working set and taxonomic information on its component taxa/species.

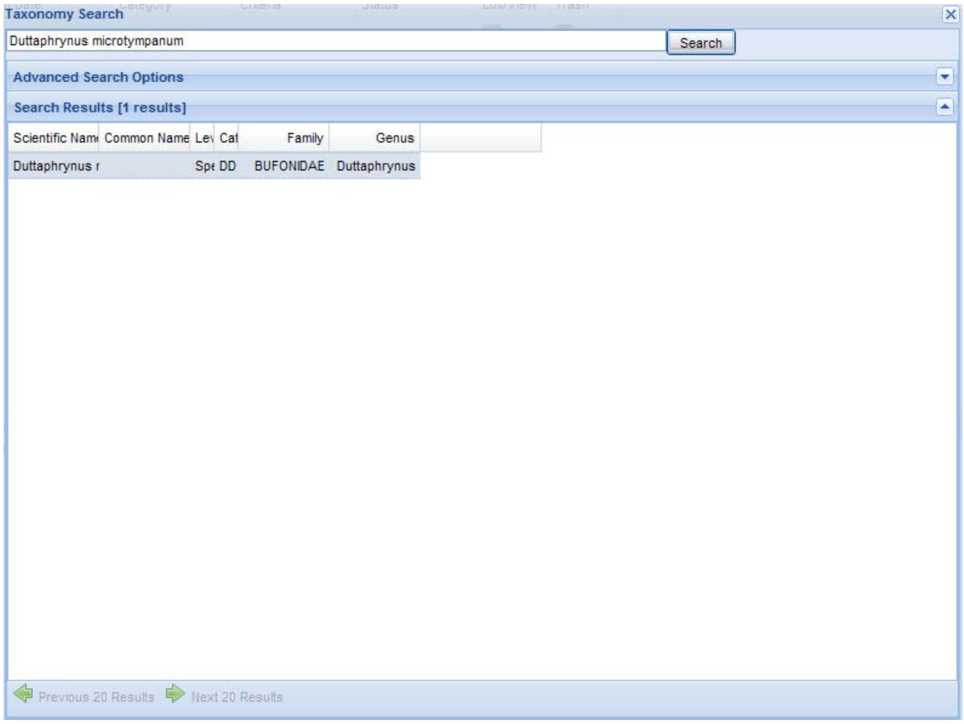
The Recent Assessments pane lists the last ten species that have been worked on, including their assessment status (Published or Draft) and their nature (Global or Regional).

Inbox and Assessments to review are functionalities that can be used between users that are working on given subsets of a database (i.e. Working sets) and assessors.

Editing data on taxa that are already in SIS

If we wish to quickly find a particular taxon, we click on the magnifying glass icon in the Search toolbar (top right corner of the screen, circled below):

This will open up a Taxonomy search window. Type the name of the species that we are looking for, e.g. the toad *Duttaphrynus microtympanum*, and click on the search button. This will return a list of matching names found in the system, taxonomic hierarchy up to family level and the current threat category for each taxon in the list:

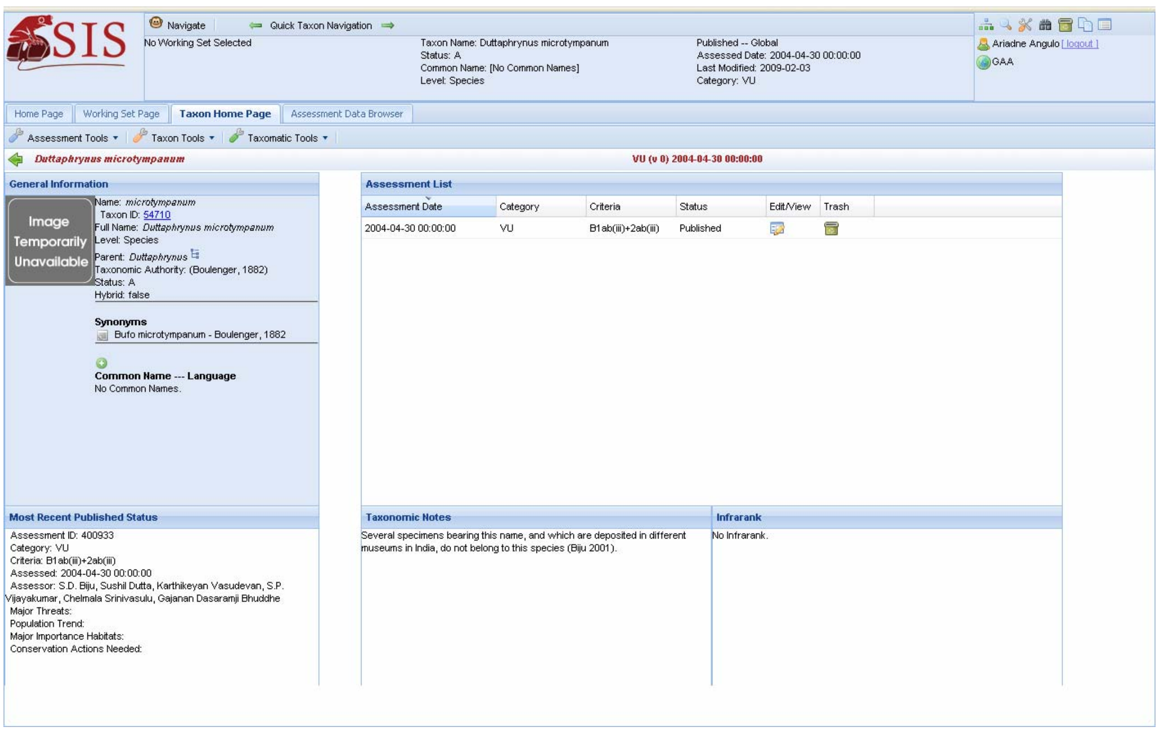


Another way of finding a taxon is to use the Peruse the Taxonomic Hierarchy button to the left of the magnifying glass icon; this button allows us to browse the hierarchical level down to the taxon of interest. Once there, we click on the View button and then on the Taxon Home Page tab.

If we click on the species name, it will take us to the Taxon Home Page, indicated by the highlighted Taxon Home Page tab (see image below). On the left pane we will find the species name in red lettering and below its associated General Information, while on the right pane we will find the species' current threat category in red lettering and below we will find a list of the assessments available for this species by date, including a summary of the threat category and criteria and its status in each assessment. If an assessment's Status reads as being Published, it means that it has already been published on the Red List. If it figures as Draft, it is still being worked on.

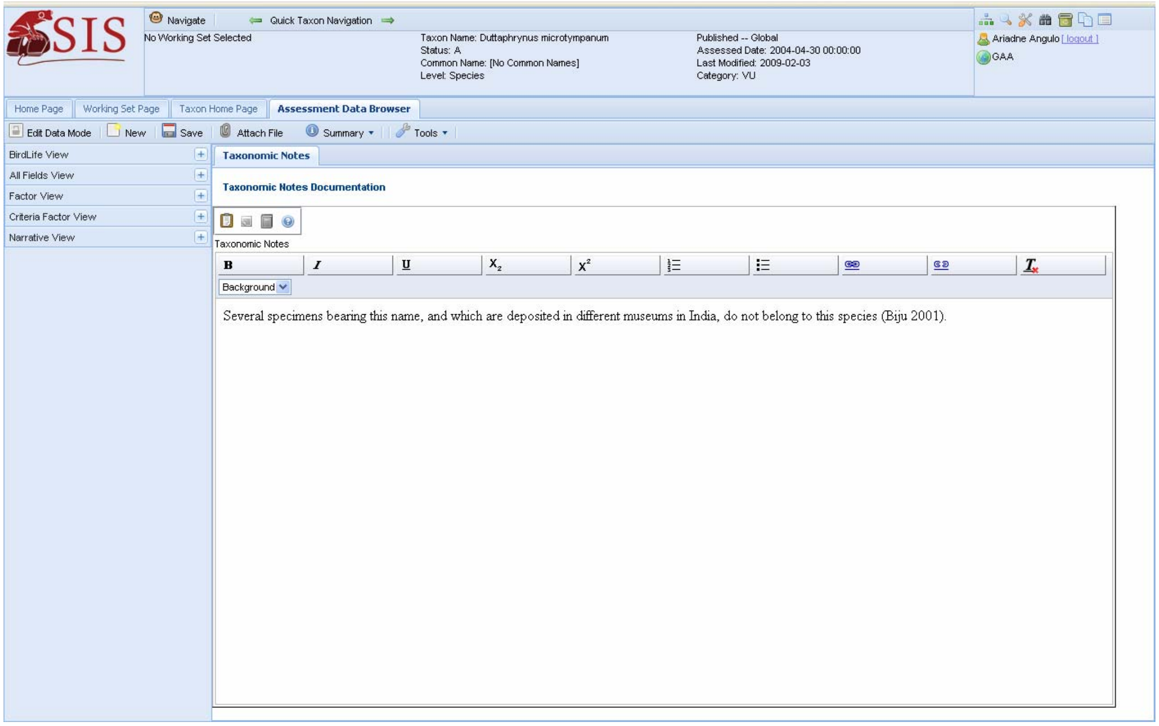
SIS contains the entire history of a species' assessments, and each assessment contains all of the information included for a species at the time of that respective assessment.

Warning: Any changes done to a Published assessment will directly affect the content of the assessment that is on the Red List when it is next updated.

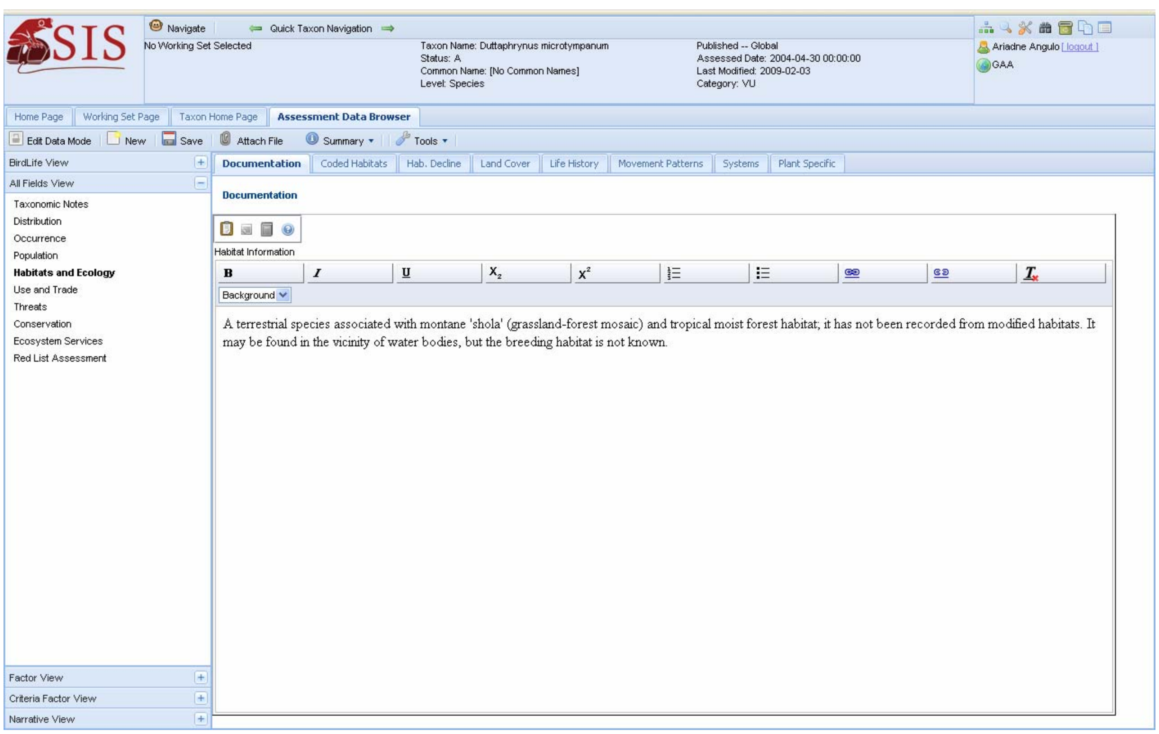


In the General Information pane in the left, there is a hyperlinked number next to the Taxon ID field. Clicking on this number will link to this particular species' account in the Red List page. Under the Parent field, in the same area, there is a squares and line icon – clicking on this icon will open a pop-up window with the taxonomical hierarchy for the species in question.

If we click on the Edit/View icon (or on the Assessment Data Browser tab, if it has already been opened), it will take us to the Assessment Data Browser window (tab highlighted). Under this tab, the left pane displays the different View options available for viewing the assessment data (i.e. All Fields View, Factor View, Criteria Factor View, Narrative View; these are customizable according to user preferences), as shown below:



Clicking on any of these Views will provide details of the different sections available under them. So, if we click on e.g. Habitats and Ecology under All Fields View, SIS will display this section's information on the centre-right side of the web page, and the specific tabs (components) associated to this section (below). Note that Habitats and Ecology is bolded in the Fields pane so that we can quickly identify where we are located within the assessment.



All tabs have a handful of icons that can be used to facilitate editing of fields:

= Deletes data
= Adds a reference (changes colour to blue when a reference has been added and saved)
= Adds notes (changes colour to yellow when text has been added and saved)
= Definable terms
There is also a clipboard icon that allows us to copy and paste text from one field to another (sorry, couldn't copy that icon!)

= Information

Beneath the icon toolbar we will find several toggle buttons that allow us to change different features in the narrative/text fields; these work in much the same way as they would in a word processing application. Thus, **B** = Bolds text, *I* = Italicizes text, U = Underlines text, X_2 = Subscripts text, X^2 = Superscripts text, and so on. The $\underline{\mathbf{T}}_x$ function removes the formatting from text (e.g. Word-formatted text as .rtf, instead of .xhtml). It is also possible to change the background colour of entered text, essentially allowing users to highlight text that they may want to revisit or follow-up on, for example.

Bibliography

The Bibliography is not present as a stand-alone section in the different Views – this is because the Bibliography is now integrated into the different sections, so that we can associate a specific reference to a specific section. If we click on the icon in any section of an assessment, it will open up a new window and will give us the option to either search the existing reference database or add a reference to the Bibliography [under the Reference Search tab, Enter New Reference button]. If searching, we should enter the author(s) name(s), year and/or title or if adding a new reference we should click on the Enter New Reference button. Note that when we add a new reference and it has been accepted, we will need to run a search for the newly added reference so that it figures in the resulting hits. We select (by clicking once) the reference of interest and then click on the Attach Selected button, which will proceed to include it in the Bibliography tab for that particular section. We can either click on the Bibliography tab or close the window and check that the icon colour has changed to blue () to ensure that the reference has been added.

In order to access Bibliography in SIS, click on the Tools button and select Manage References while editing or viewing a species' assessment.

Every time we click on a different section of the View we are using we will get a pop-up window with the following message:

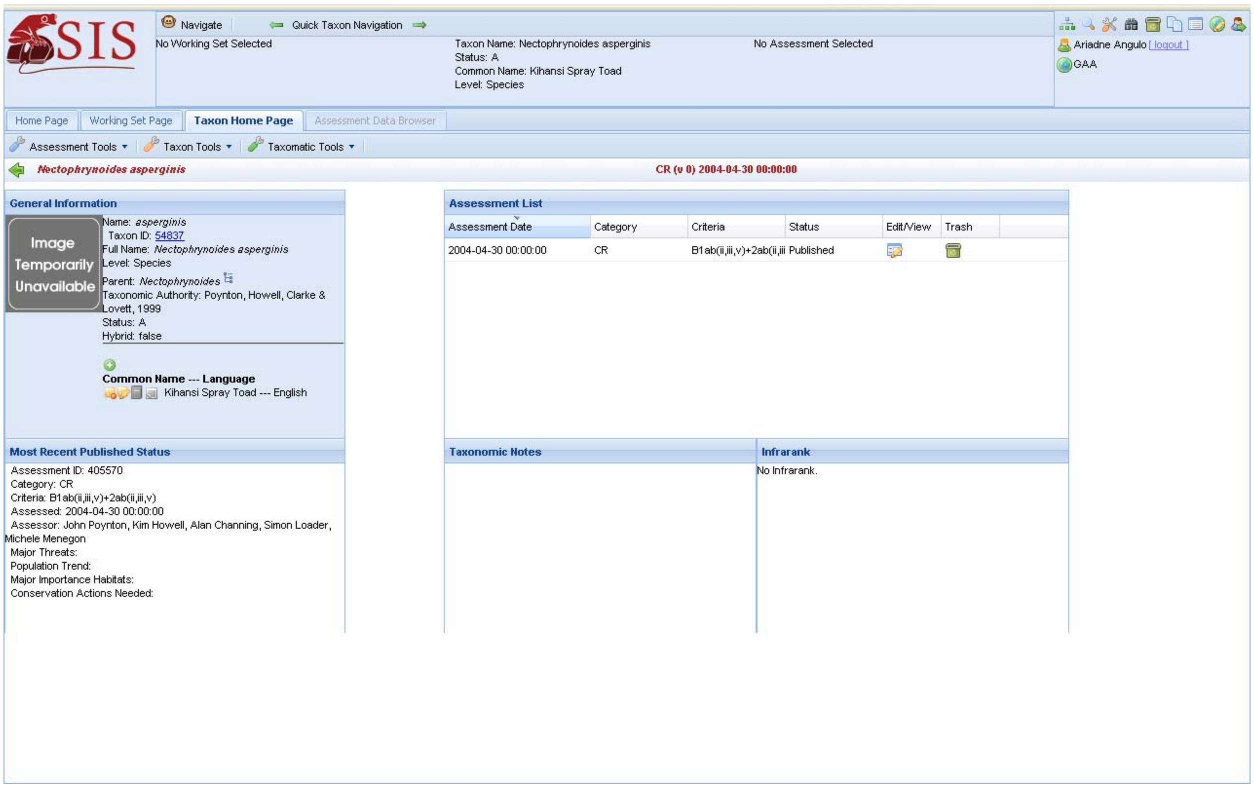
Navigating away from this page will revert unsaved changes. Would you like to save?

Yes *No*

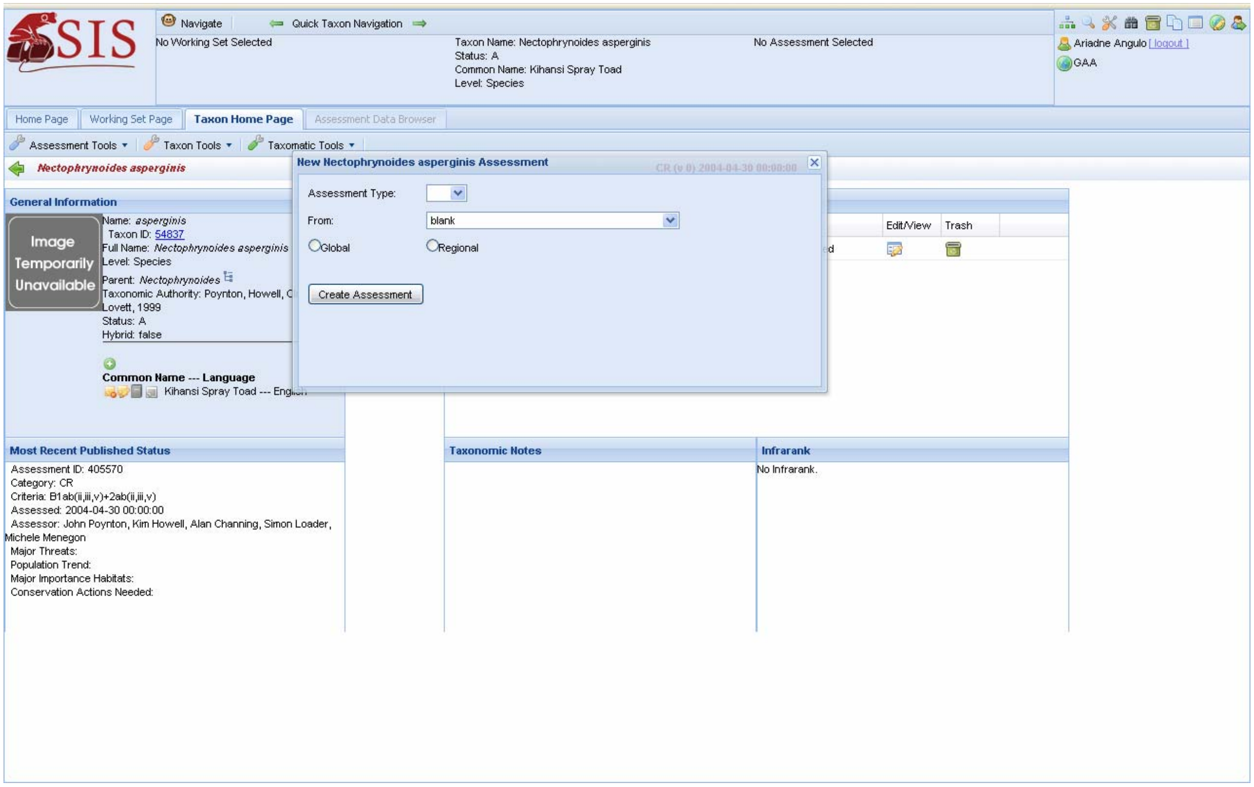
This allows us to save any changes we may have made to the specific section we have been working on.

How to create a New Assessment

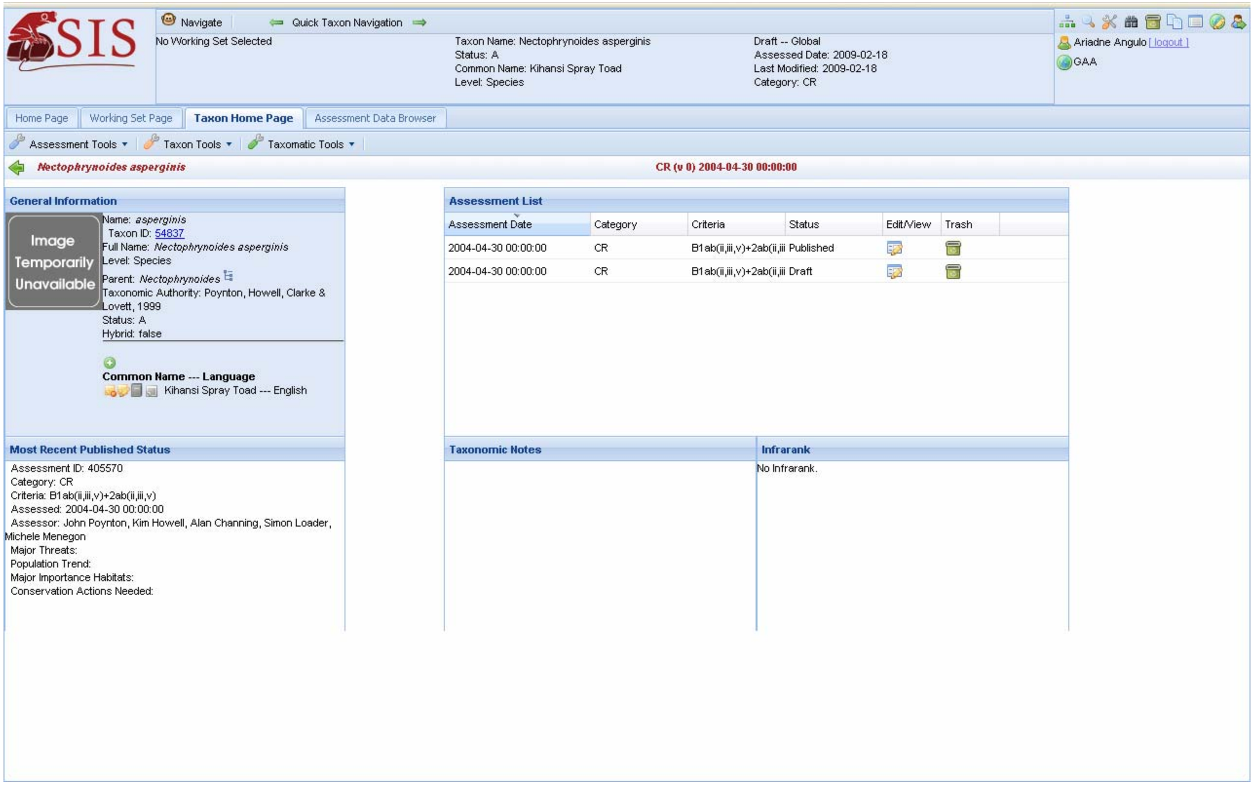
Let us suppose that we have new information for a species that is already in the database and that we know that this information will have a bearing on its threat status, such as population status information, geographic distribution and/or threats. In order to create a new assessment or reassessment, we first need to find the species in question, either through browsing the database through the Peruse the Taxonomic Hierarchy button or through the Search button of the “Search” toolbar, and then clicking on the Taxon Home Page tab (see *Editing data on taxa that are already in SIS)*. The Kihansi Spray Toad *Nectophrynoides asperginis* is used here as an example:



The Assessment List pane lists those assessments that are available for the species – in this case, one assessment, published in 2004. If we now click on the Assessment Tools button it will prompt a one-option menu that reads Assess Current Taxon. Clicking on this option will prompt another window to open (New “Genus species” Assessment), which will look something like this:



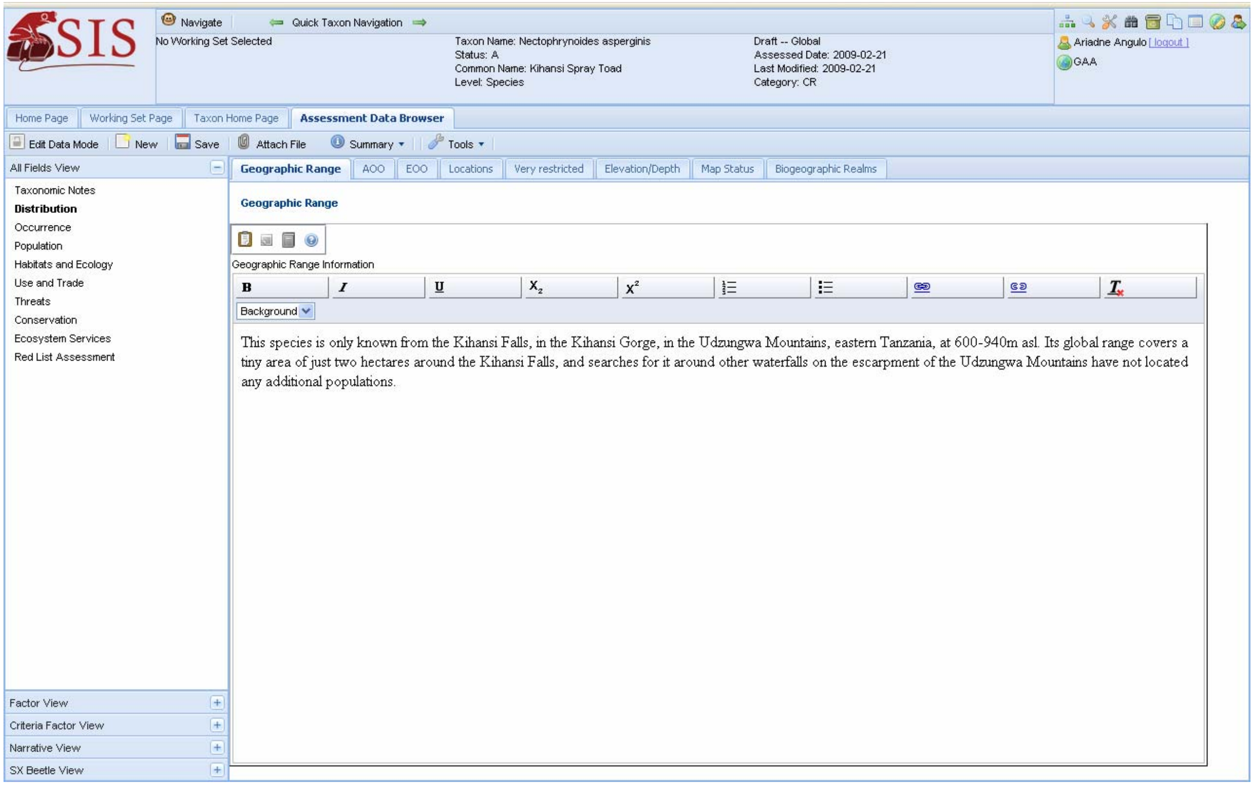
The Assessment Type field asks whether we want to use a draft or user assessment. We select Draft. The From field asks whether we want to use a pre-existing published assessment to populate our sections or whether we want our sections to be blank. To save time, we may want to choose a pre-existing published assessment – in this case, it would be the 2004 assessment. We then click on the Create Assessment button. A message will then appear saying that "An assessment for xxxx (in this case, *Nectophrynoides asperginis*) has been created". The Assessment List pane will not show the new assessment added unless we leave that tab and then return to it. So we can click on any other tab and then click again on the Taxon Home Page tab. This time it should show the newly added draft assessment, which will have the date of the assessment that we used to populate the different sections:



Suppose that we created a blank draft assessment and then figured that it was better to create one from a previous assessment. We can just click on the Trash button for that draft assessment. A pop-up window will ask whether we are sure that we want to delete this assessment. If we click on Yes, SIS will then discard this assessment, and we can repeat the procedure to create a new assessment according to our preferences.

Another way to create new assessments is by clicking on the Edit/View icon of the most recent assessment or the assessment that we want to use. We can click on the New button and select assessment type (i.e. draft) and in the From field we can select either the published assessment that we want to use as a template or a blank assessment.

Once we have created our new assessment and are in the Assessment Data Browser tab, notice that there are six buttons (Edit Data Mode, New, Save, Attach File, Summary and Tools) in the top row of that tab:



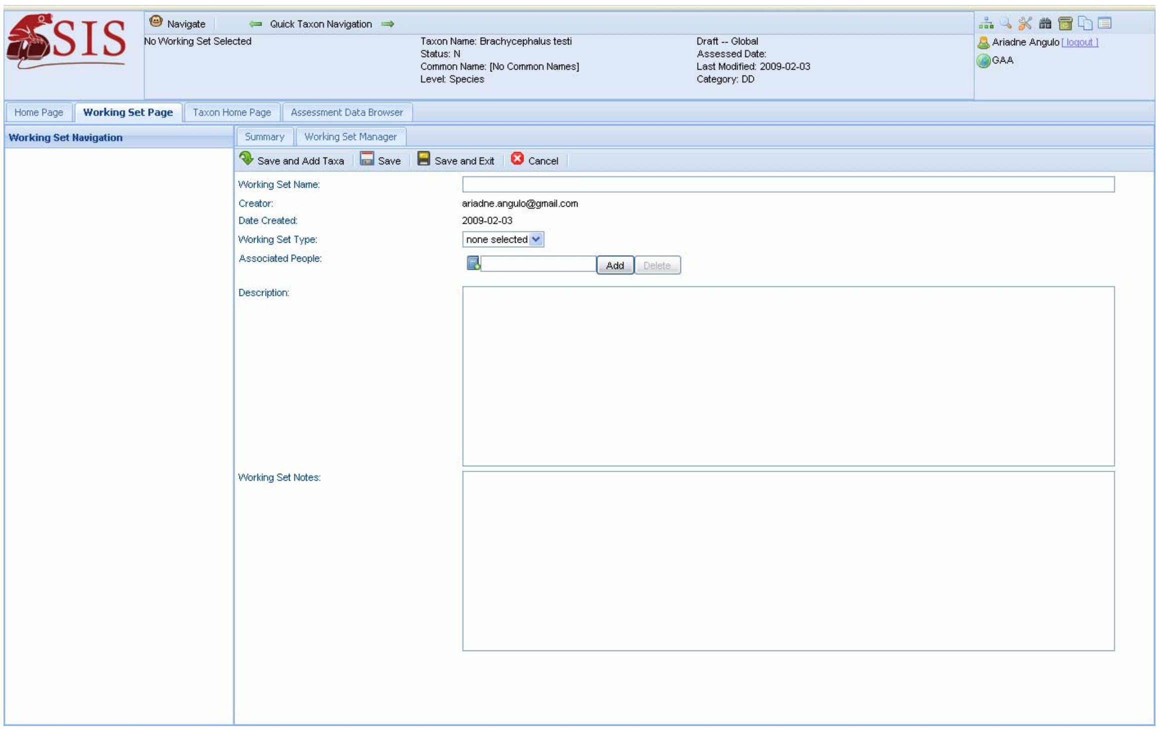
The Edit Data Mode can be changed to Read Only mode with one click of the mouse, so be sure that the button is set to Edit Data Mode when changing any specific section of an assessment. The New button prompts the creation of a new assessment; the Save button has to be clicked every time we have made changes that we want to keep in a section and the Attach File uploads any specific file that we consider is relevant to the section in question. The Summary button contains a feature called the Quick Criteria Generator Result, which in essence calculates the best possible threat status for the species in question given the information that is populated into the different fields. It is, however, also possible to change this to manual under the Red List Assessment section, Red List Status tab (Enter Manual Data/Revert to Calculated button).
The Tools button has a drop-down menu that allows users to do edit common names, synonyms, attach images, manage references, view notes, track changes, see comments and view reports.

Notice that each section on the left under a given View option (i.e. Distribution, Occurrence, Population, etc.) has several tabs with different kinds of information. It will not be possible to populate all of these tabs for most taxa, but it is important that the narrative/text fields are as clear and as detailed as possible (especially with regards to threats), as these are the main source from which different fields and classification schemes are developed for each taxon.

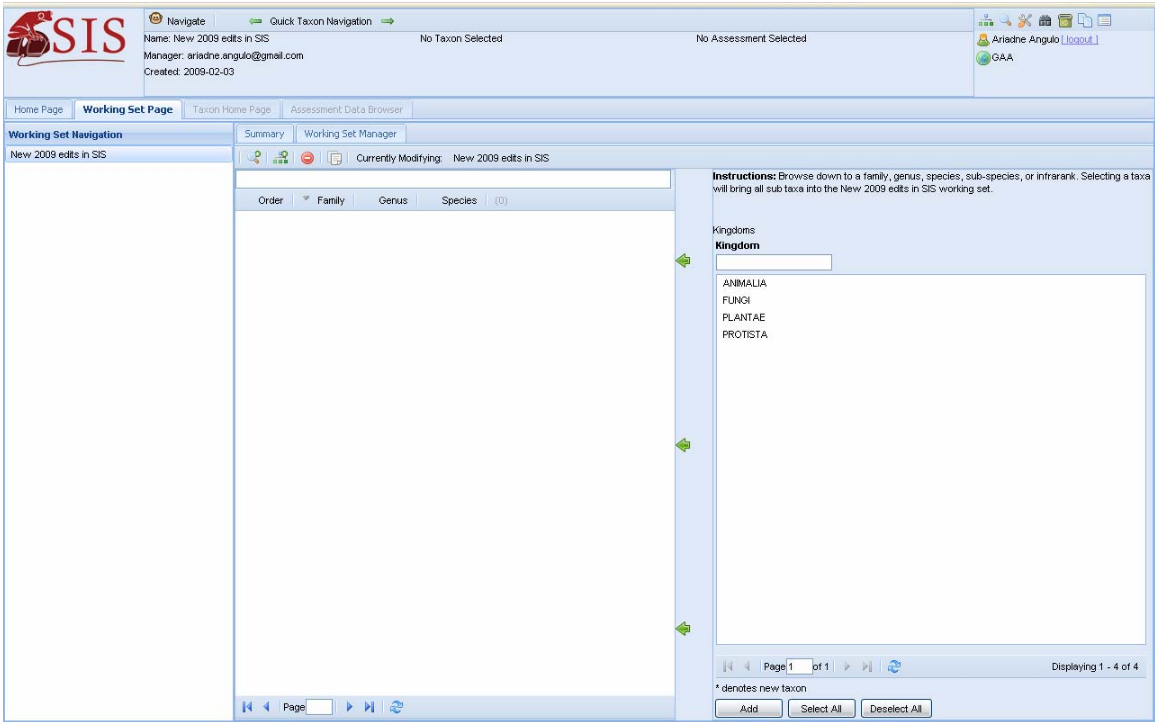
Creating a new Working Dataset

Working datasets are a convenient way to group and manage different sets of taxa. This functionality allows us to group taxa by different parameters, such as taxonomic groups, assessment date, region/country, etc. The Working Set Manager (under the Working Set Page tab) enables us to create, edit (including adding or removing taxa from a dataset), import and export (both for offline use and for querying subsets with Microsoft Access) datasets as well as generate reports (species accounts) for species in these datasets. All Working set functions can be found in the Working Set Page tab.

Let us suppose that we want to keep track of all of our new edits in SIS, or that we want to cluster all species of a given region together for a workshop or follow-up with experts. Click on the Working Set Page tab. The centre-right pane displays two tabs, Summary and Working Set Manager. Click on Working Set Manager. This tab displays a number of buttons, all of which are applicable directly to working sets. Since we don't have a working set yet, we'll click on the first button: New Working Set, which will create a new set for us. The screen that follows should look something like the one below:

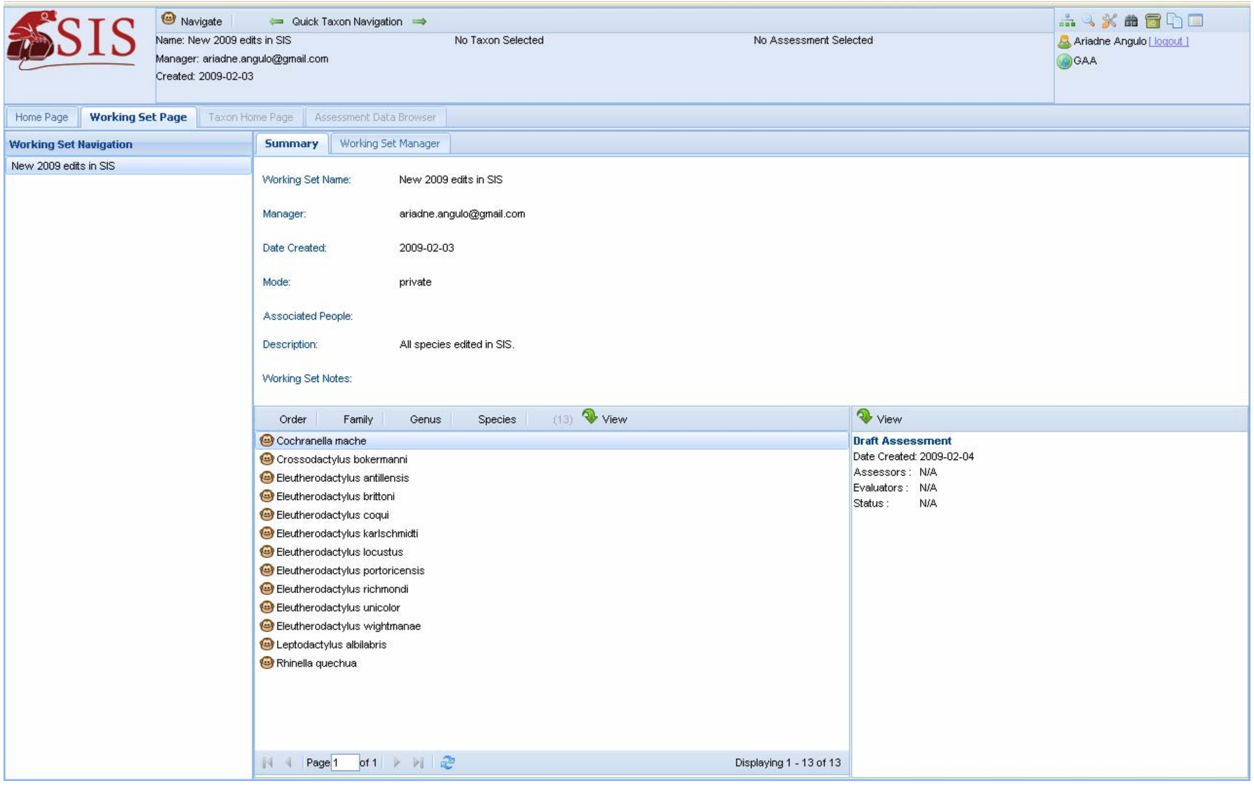


We can pick a name for the Working Set, e.g. New 2009 edits in SIS. For Working Set Type, we can choose between private and public (Jim recommends private to make it safer), and for a Description we can write anything that helps identify the Working Set (we have to write something in this field, otherwise we can't save the Working Set!). We then click on the Save and Add Taxa button. Under the Working Set Navigation pane we should now see the name of our new Working Set – in our case, New 2009 edits in SIS. Our Working Set is now created, but we still need to populate it. If we go back to the Working Set Manager tab and click on the Taxa Manager button, we should see something similar to the following window:



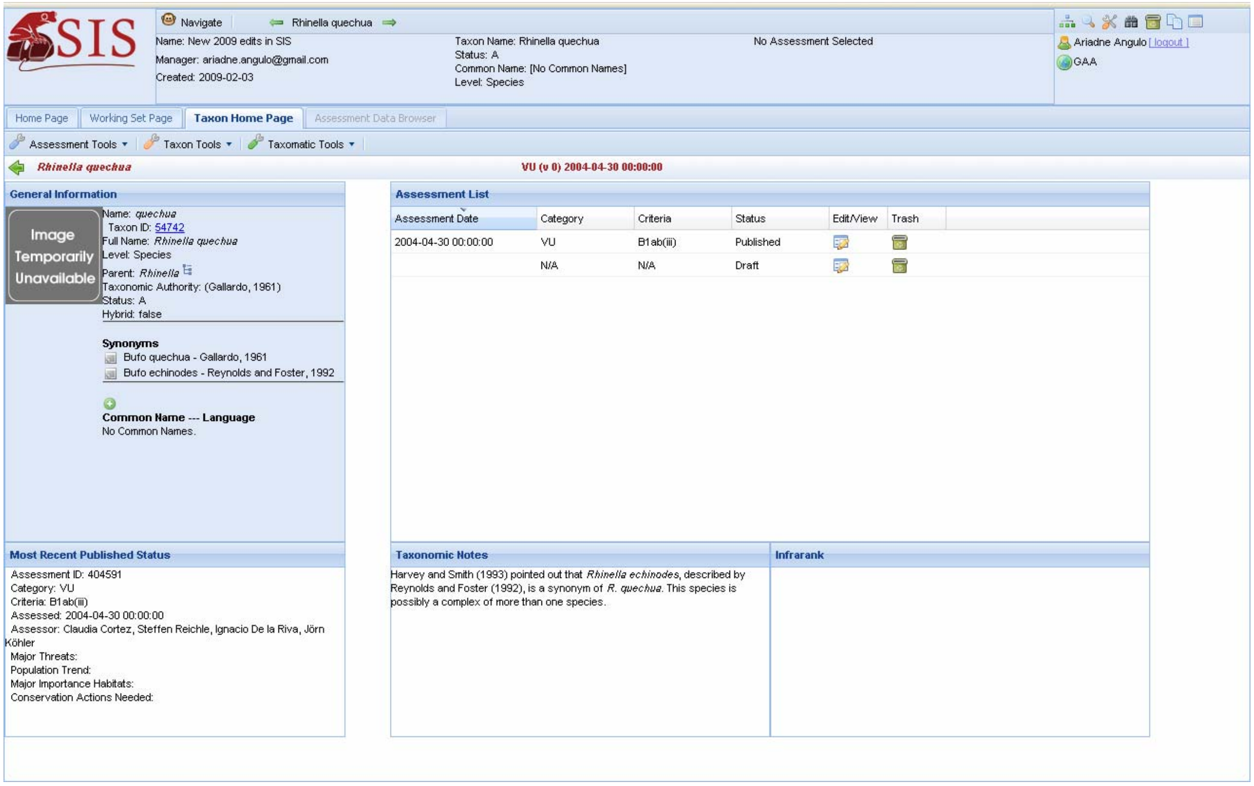
Using the pane on the right hand side, we can browse down to the hierarchical level of interest (in our case, the species level). We can select one or more species by ticking the appropriate boxes, and once done, click on the Add button. A pop-up message reading "Taxon successfully added to working set New 2009 edits in SIS" should appear. The species added should then appear on the central pane. If only a list of number of species by a higher hierarchical level is shown (such as e.g. Anura – 12 species), click on the Species button at the end of the taxonomic buttons – this should list every species that has been added to the Working Set.

Now some (or most of these species, if this is the first time that we'll will be dealing with them this assessment year) species will likely need new draft assessments. Click on the Working Set Manager tab and then click on the Assessment Manager button. This will take us to a new window that allows us to add draft assessments to either the entire Working Set or to selected taxa. Once we select the taxa that we want to add draft assessments to and click on the Create Assessments button, we will have a Working Set of taxa with draft assessments that are ready to be edited and that may look similar to this:



Note that the draft assessment data (or lack of) is displayed for the species that is highlighted in blue. We can scroll down the list and the assessment data will change according to the highlighted species. Note, too, that if the Working Set contains any species that we may have recently worked on (such as after the Red List going online last year), SIS will use the assessment done back then as the default draft assessment. **A species can only have one draft global assessment and one draft regional (per region) assessment at a time.**

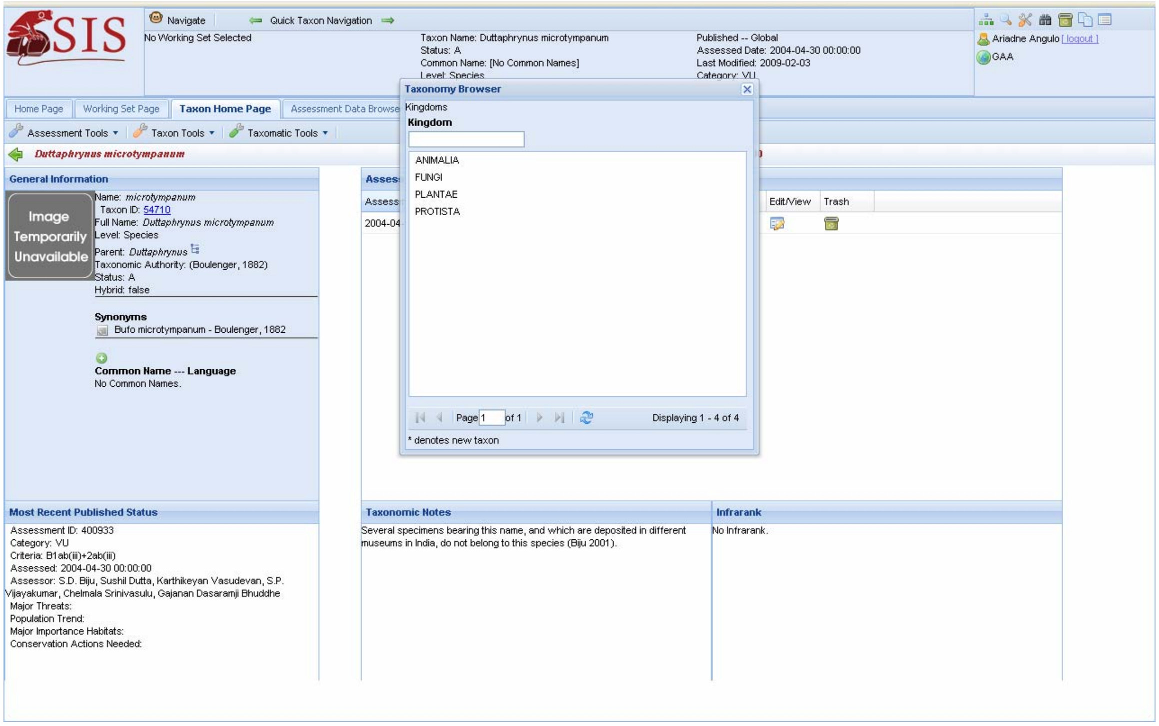
To start working on any given species within our Working Set, we highlight the species we want to begin with, and click on the View/green arrow button above the list. This will take us directly into the Taxon Home Page for that particular species. The image below displays the Taxon Home Page for the selected species, toad *Rhinella quechua*:



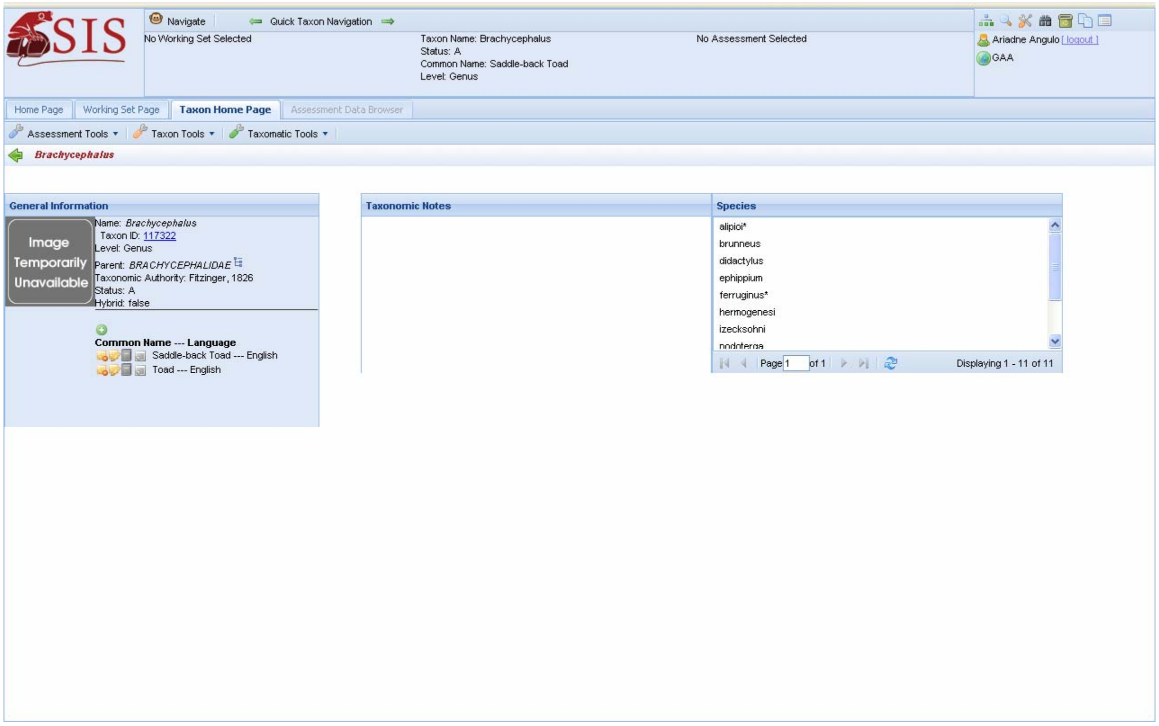
If we now click on the Edit/View icon in our draft assessment, it will take us to the Assessment Data Browser page for *R. quechua*. Note that all of the sections in the species account are empty – some sections will need to be populated from previous assessments available for the species.

Adding a new taxon to SIS

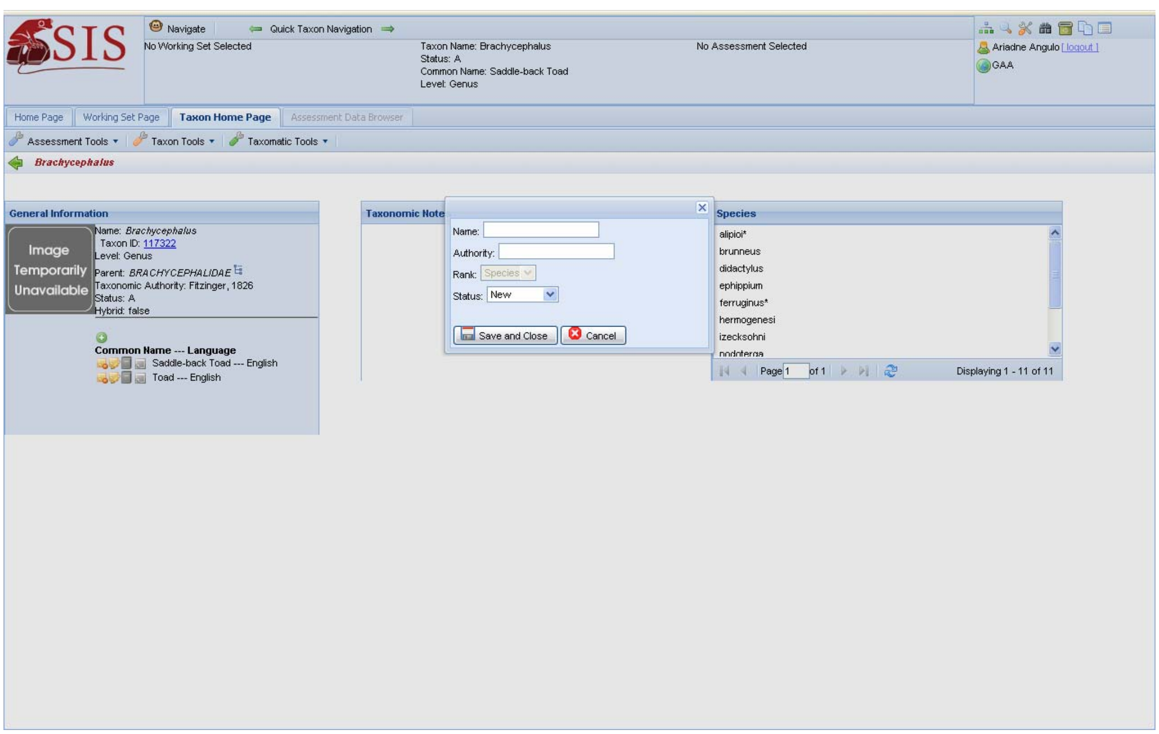
Suppose there is a newly described species that we would like to add to SIS. We click on the main SIS Home Page tab, and then click on the Peruse the Taxonomic Hierarchy icon on the Search toolbar. A pop-up Taxonomy Browser window will appear, allowing us to navigate through the taxonomic hierarchy.



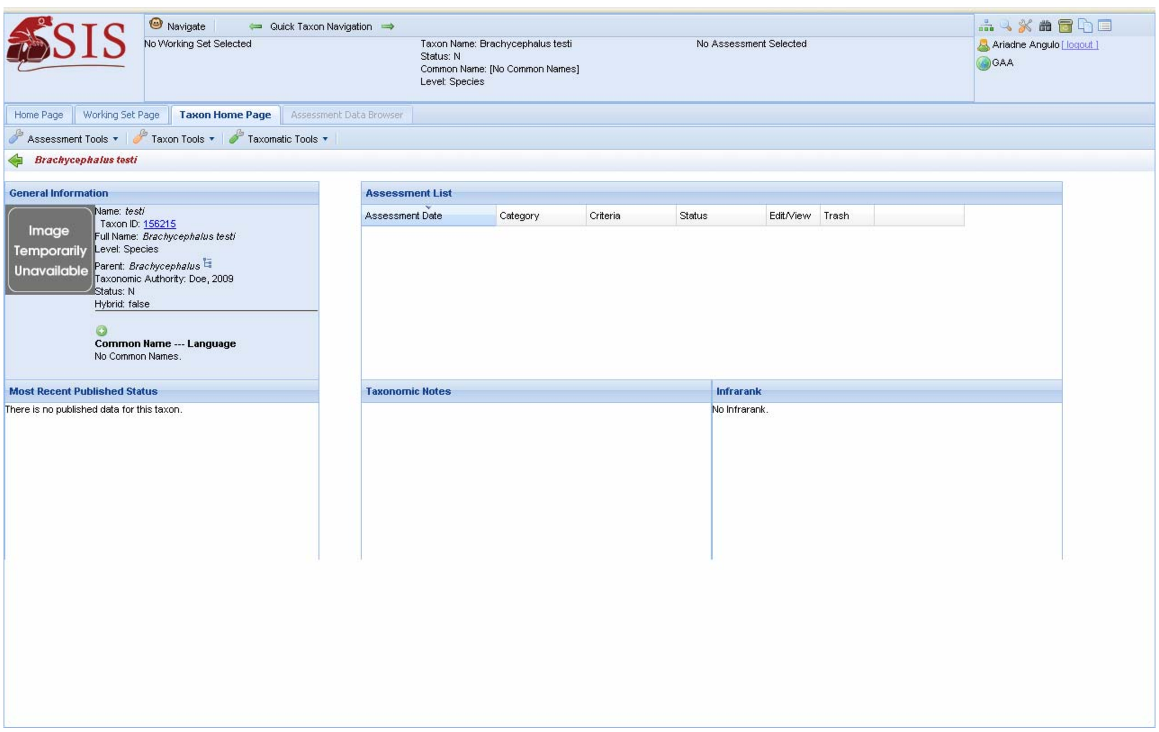
We navigate down to genus level, and then click on the “View” button. We then close the pop-up window and click on the Taxon Home Page tab. This tab will now display information for the genus that we have selected, including a list of existing species under this genus in the right hand pane. The image below shows results for the toadlet genus *Brachycephalus*, which contains 11 species (the bottom of the species list pane displays both the page number and the number of taxa displayed in that page):



We then click on the Taxomatic tools button and select Attach New from the drop-down menu. A pop-up window appears prompting us to include the new species name, the authority who described it and the species status.



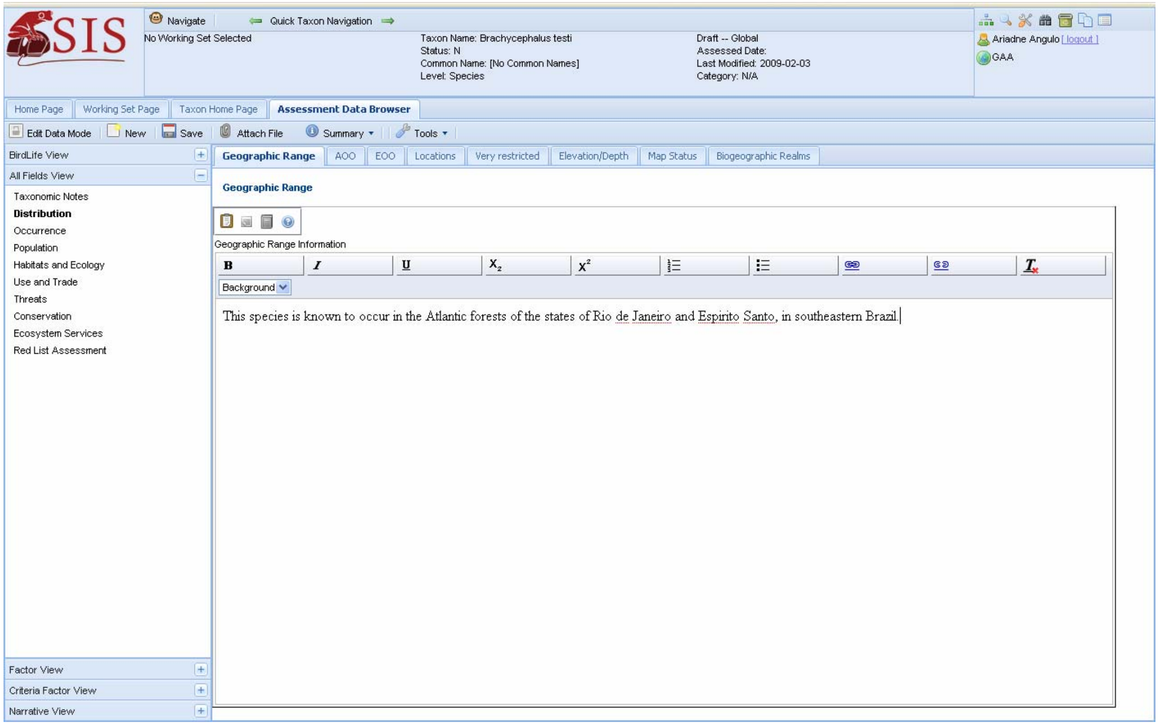
Once we fill in the three fields (when filling in the species name we just include the specific epithet without the genus name) and click on Save and Close, the species will be added to the species list for that genus. A pop-up window will also ask us if we wish to add this taxon to an existing dataset, which we may or may not want to do. Let us suppose, however, that we want to keep all of our new edits and additions in a single working dataset. If we click Yes, a new pop-up window that reads “Choose the working set you would like to add (species name) to”, and will list our existing working sets, if we have any. We then select the working set that we want the species added to and click Add to selected. A new pop-up window will appear indicating that we have been successful in adding the new species to our working dataset, and the species will now figure on the list of species detailed in the Taxon Home Page and in the total number of taxa displayed. Our newly added species name will sport an asterisk next to it – this indicates that the species is a new addition to the database. If we click on the species’ name, it will take us to the species’ Taxon Home Page, which will be empty except for the information we entered in the pop-up window. There is also a Status field (under the General Information pane on the left hand side), which should read N for new taxon (this is automatically done by SIS). Here’s an example with the fictitious test toadlet, *Brachycephalus testi*:



Editing newly entered taxa

To create and edit a new assessment for the newly added *Brachycephalus testi*, we follow the same procedure as when we add and edit a new assessment for a species that is already in the database (see sections *Editing data on taxa that are already in SIS* and *How to create a New Assessment*). Given that this is a new species for which there is no pre-existing information, the assessment will likely be blank and it will be a draft Global assessment.

Once we create a new assessment for *Brachycephalus testi*, if we then click on the Assessment Data Browser tab and choose our preferred View (e.g. All Fields View), we will be able to populate the different fields for each section:



It is important to remember to click on the Save button every time we finish a section, so that work is saved as we develop a particular assessment.

Generating reports

SIS has a built-in functionality that allows users to view reports of specific assessments and to save them so that they can be sent to assessors. Under the Assessment Data Browser tab, we click on Tools and then click on View Report from the drop-down menu. This will open a new tab in the browser with assessment details and the species account. The following example illustrates the top section of a report view for the frog *Holoaden pholeter*:

DRAFT

***Holoaden pholeter* - Pombal, Siqueira, Dorigo, Vrcibradic and Rocha, 2008**

ANIMALIA - CHORDATA - AMPHIBIA - ANURA - STRABOMANTIDAE - Holoaden - pholeter

Common Names: No Common Names
Synonyms: No Synonyms

Red List Assessment

Red List Status
DD - Data Deficient, (IUCN version 3.1)

Assessment Information

Date of Assessment: 2009-02-20

Evaluated?	Date of Evaluation:	Status:	Reasons for Rejection:	Improvements Needed:
False	-	-	-	-

Assessor(s): (Not specified)

Evaluator(s): (Not specified)

Contributor(s): (Not specified) **Caveat:** False

Petitioned: False

Regional?	Region:	Endemic to Region:
False	-	False

Regional Expert Questions: ,0

Assessment Rationale

Listed as Data Deficient since it has only recently been described, and there is still very little information on its extent of occurrence, status and ecological requirements.

Reasons for Change

(Not Specified):

Occurrence

Countries of Occurrence

In order to save this report, we can a) save the page as an html document using our browser's interface (i.e. via File>Save Page As), or we can b) save it as a pdf document if we have Adobe Acrobat, again using our browser's interface (via File>Print).

Note that the report is all-inclusive and automatically includes tabs and fields from the All Fields View.

Current SIS issues being addressed

Streamlining SIS is still work in progress, and as such, there are still several issues that are in the process of being addressed. Some of these are as follows:

- When trying to save whatever new text you added in a given assessment, you may get a message that reads "Save not needed - No changes were made".

- When adding a reference for a particular section of a species account, a pop-up window appears to confirm that it has been added, but the options are Close and Ok – and nothing happens when we press Ok, so only need to click on Close.

- When trying to edit a reference: When clicking on Edit/View Selected Reference an Edit Reference window appears. However, when trying to Save and Close the window the following message appears: Update citation The citation does not accurately reflect all of the entered information. Would you like to update the citation before saving? The new citation would be: (Details of specific citation are provided).

- There are three buttons at the bottom of the page (Yes, No and Cancel), but the changes do not appear to be encompassed regardless of which button is chosen and the appearance of the ensuing message Successfully committed reference changes. The edit function does not appear to be doing anything, but what is happening is that it is creating a new reference with the changes without overwriting or deleting the previous reference, which is most likely tied to an assessment. There is currently no way to remove a reference from the reference library if tied to an assessment.

- First author surnames that have an umlaut somewhere may be entered in the bibliography but the search function does not appear to find them to tie them to specific assessments.

- The creation of draft assessments for species in Working Sets (i.e. batching draft assessments) does not provide us with the option of choosing between a blank assessment or using a pre-existing one to populate the different assessment sections. So if a user wants to use a pre-existing assessment to populate a draft one, it is best to add each species to a working set separately.

- Biogeographic realm and Seasonality appear not to have been uploaded.

- In Ecosystems services, every time we tick insufficient information available we get the following message: All coded services should have an importance score of 5 - Not Known.

- The report option has some missing information, i.e. absence of bibliography.