Use cases for Openlands Universal FQA Calculator

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Introduction:

This document provides use case storyboards that illustrate the steps a user takes to perform the major functions of the Universal FQA Calculator. The use case storyboards are to help evaluate the usability of the site’s design and ensure that all user requirements are fulfilled.

The user interface has been designed with a modern, minimal look using components that are responsive to different devices and screen resolutions. The site behaves and looks great on desktop browsers as well as tablets and smartphones.

Project deliverables:

All code for the project is hosted in an online version control repository that can be accessed here: https://github.com/wf8/universalFQA

Project overview:

The Floristic Quality Assessment (FQA) is a metric of ecological quality developed by Swink and Wilhelm in 1994. FQA is calculated using 'coefficients of conservatism' assigned to individual plant species based on their endemism to a certain habitat and tolerance to disturbance.

Widely used by state and federal agencies as well as conservation non-profits to monitor and assess natural areas, FQA databases have been developed for much of the United States. However, all current FQA computer programs only calculate FQA for a single region or habitat, and for many regions FQA must be calculated by hand. This web-based FQA calculator will enable the user to choose from any existing FQA database, and as new FQA databases are developed they can be uploaded into the site.

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Use case storyboards:

Scenario 1: Logging into the FQA Calculator
Actor: anyone
Preconditions: none

Step 1: User goes to http://universalFQA.org and sees the landing page. User clicks “Login/Register” button.
Step 2: User views the login page. User either creates a new account or logs in with their existing account.
Step 3: After the user has logged in, they see a list of all Inventory and Transect Assessments they have created. Across the top of the window is the black menu bar that provides the main navigational links to view the FQA databases, edit account info, or logout.
Scenario 2: Modifying user account info
Actor: any site user
Preconditions: User is logged in.

Step 1: If this user wants to change their password or email address, they will click the “Account Info” link in the top menu bar. They can now edit the account information and click “Save”, or cancel and press “Done”.

![Account Info form](image_url)
Scenario 3: Creating new Inventory Assessments
Actor: any site user
Preconditions: User is logged in.

Step 1: User clicks “Assessments” in the top menu bar and returns to the list of assessments. The user then clicks the “New Inventory” button.
Step 2: User selects from the pull down menu an FQA database to use for this assessment. All uploaded public databases are available, plus any customized versions the user has created.
Step 3: User enters information about the assessment. The name, date, and site are required, though other fields are available. The site information can be edited by clicking the “Edit Selected Site” button. The user scrolls down to add species to the inventory (see below).
Step 3 (continued): The user scrolls down to add species to the inventory. Species can be added individually by searching for scientific name, acronym, or common name. Species can also be added in bulk by pasting a list of comma-separated names in the text box. Species can be removed from the inventory by selecting them and clicking “Remove Selected Species”. When the user is done adding species, they click “Save and View Results”.

![Universal FQA Calculator](image)
Scenario 4: Viewing Inventory Assessments
Actor: any site user
Preconditions: User is logged in and has created an Inventory Assessment.

Step 1: From the list of assessments, the user either clicks on the name of the assessment or on the “View” link. Alternatively the user may have just created or edited an assessment and clicked “Save and View Results”, in which case they will proceed to Step 2.
Step 2: Viewing an inventory assessment: buttons enable the user to edit the viewed inventory or to download it as a spreadsheet. The assessment’s data, location, and other details are then listed. Below that is a list of conservatism-based metrics, species richness and wetness, physiognomy metrics, and duration metrics. At the bottom is the list of species in this inventory (cut off by the scrolling).
Scenario 4: Editing Inventory Assessments
Actor: any site user
Preconditions: User is logged in and has created an Inventory Assessment.

Step 1: From the list of assessments, the user clicks on the “Edit” link for a certain assessment. Alternatively the user may have just viewed an assessment and clicked “Edit This Assessment”, in which case they will proceed to Step 2.
Step 2: Editing an inventory assessment: all the text fields are editable. If the user scrolls down they can edit the list of species (cut off by the scrolling-see below).
Step 2 (continued): The user scrolls down to edit the list of species. More species can be added, and species can be removed. When the user is finished, they click the “Save Changes and View Results” button.
Scenario 5: Creating new Transect Assessments
Actor: any site user
Preconditions: User is logged in.

Step 1: User clicks “Assessments” in the top menu bar and returns to the list of assessments. The user then clicks the “New Transect” button.
Step 2: User selects from the pull down menu an FQA database to use for this assessment. All uploaded public databases are available, plus any customized versions the user has created.
Step 3: User enters information about the assessment. The name, date, and site are required, though other fields are available. The site information can be edited by clicking the “Edit Selected Site” button. The user scrolls down to add quadrats to the inventory (see below).
Step 3 (continued): User scrolls down to create quadrats for this Transect Assessment. The user clicks the “Create New Quadrat” button. Once quadrats have been created the user can select which quadrats they want included in the FQA calculations. The unselected quadrats will remain saved for future use (also see page 26).
Step 4: Creating a new quadrat: the user enters a name or number for the quadrat. Latitude and longitude can be optionally saved for each quadrat as well. Species are then added in the same way as they are to an inventory, except the user must enter percent coverage for each species. Once the quadrat is saved, the user returns to the “New Transect Assessment” page (see step 3), where they can add more new quadrats.
Scenario 6: Viewing Transect Assessments
Actor: any site user
Preconditions: User is logged in and has created a Transect Assessment.

Step 1: From the list of assessments, the User either clicks on the name of the assessment or on the “View” link. Alternatively the User may have just created or edited an assessment and clicked “Save and View Results”, in which case they will proceed to Step 2.
Step 2: Viewing an transect assessment: buttons enable the user to edit the viewed inventory or to download it as a spreadsheet. The assessment’s data, location, and other details are then listed. Below that is transect level data: conservatism-based metrics, species richness and wetness, physiognomy metrics, and duration metrics. Next are quadrat level data (cut off by scrolling; see below).
Step 2 (continued): The user scrolls down to view quadrat level data. A summary of metrics is provided for each quadrat, followed by the species lists for each quadrat.
Scenario 7: Editing Transect Assessments
Actor: any site user
Preconditions: User is logged in and has created a Transect Assessment.

Step 1: From the list of assessments, the user clicks on the “Edit” link for a certain assessment. Alternatively the user may have just viewed an assessment and clicked “Edit This Assessment”, in which case they will proceed to Step 2.
Step 2: Editing a transect assessment: all the text fields are editable. If the user scrolls down they can edit the quadrats included in the assessment (cut off by the scrolling-see below).
Step 2 (continued): The user scrolls down to edit the list of species. Quadrats can be deleted or new quadrats can be added. The user can select which quadrats they want included in the FQA calculations by clicking the checkbox under “Active?”. The inactive quadrats will remain saved for future use. The quadrats can be edited by clicking the “Edit” links.
Step 3: Editing quadrats: the name, species list, and percent coverage can be edited and changes saved.
Scenario 8: Uploading a new FQA database
Actor: any site user
Preconditions: User is logged in.

Step 1: The user clicks the “FQA Databases” link in the top black menu bar. A list of all public databases is shown, with their region, year published, and description. Below that is another list of all the user’s customized databases, which are based off a public FQA database (see page 31). To upload a new public FQA database, the user clicks the blue “Upload New Public FQA Database” button.
Step 2: The user enters the region, year published, and description. Next are instructions (with examples) on how to edit the spreadsheet file to be uploaded (continued below).
Step 2 (continued): The user formats the spreadsheet file according to the specifications and then uploads the file. Note: since so many different regional FQA databases have been published each with their own different format, the Universal FQA spreadsheet format attempts to be as flexible as possible. However formatting the spreadsheets for the upload process is an intricate task that most users will probably never need to perform.
Scenario 9: Customizing an FQA database
Actor: any site user
Preconditions: User is logged in.

Step 1: Customizing FQA databases are for when the user wants to slightly modify one of the public FQA databases for their own use. For example, if the user wants to use the Swink & Wilhelm 1994 Chicago FQA database but update some of the taxonomy, they could create a customized version of the database. The user would click the “FQA Databases” link in the top black menu bar. A list of all public databases is shown, with their region, year published, and description. Below that is another list of all the user’s customized databases. To create a new customized FQA database, the user clicks the “Customize” link button next to the Chicago 1994 Swink & Wilhelm database.
Step 2: The user can now enter a customized name and description for the database, and then add, delete, or edit any of the species found in the original public database. When the user is finished editing, they click “Save” and the user can then use the customized database for assessments.