



Survey123 for ArcGIS

Outfall Safari

Pollution Details

Is there an odour at the outfall? *

If yes, please give more details in the following question:

☐ Yes

☐ No

Is there discoloration or sewage fungus at the outfall? *

If yes, please give more details in the following questions:

☐ Yes

☐ No

Is there sewage related debris at the outfall? *

Toilet paper, wipes and other sanitary items often get caught in bankside vegetation.

☐ Yes

☐ No

type	name	label
note	Intro	Welcome to the Outfall Safari app
begin group	SurveyDetails	Surveyor and Location Details
text	Name	Your name
date	SurveyDate	Date of survey
geopoint	GPSLocation	GPS Location
image	Photo1	Photograph of outfall
text	LocationDescription	Describe the location
select_one bankside	Bankside	Which bank is the outfall on when facing downstream?
end group		
begin group	PollutionDetails	Pollution Details
select_one yes_no	OdourYesNo	Is there an odour at the outfall?
select_one odour	Odour	Please rate the odour problem
select_one yes_no	VisualYesNo	Is there discoloration or sewage fungus at the outfall?
select_one aesthetics	Aesthetics	Please rate the visual appearance
select_one visualimpac	VisualImpact	How big is the visual impact or the outfall?
hidden	VisImpactScore	Visual Impact Score
select_one yes_no	SewageRagYesNo	Is there sewage related debris at the outfall?
select_one flowrate	FlowRate	Please rate the flow at the outfall
text	OtherPollution	List here any other forms of pollution at the outfall e.g. oil or fat etc.
image	Photo2	Additional photos, if required.
end group		

Outfall Safari

Technical Manual

Setting up and using Survey123 to gather data

January 2019

Produced by



The
**Rivers
Trust**

Using this document

This manual is designed to be used in conjunction with the Outfall Safari Guide published by ZSL and is part of a package of resources which ZSL and The Rivers Trust have designed to facilitate others to adopt the outfall safari methodology.

The Outfall Safari guide and the supporting resources can be downloaded here:

<https://catchmentbasedapproach.org/learn/outfall-safari-guide>

The production of the Outfall Safari guide was supported by the following partners and programmes:



**Catchment
Based Approach**



**Environment
Agency**

Setting up and managing Survey123

You need an ArcGIS Online organisational account in order to use Survey123. Charities can apply to the [ESRI non-profit scheme](#) and get ArcGIS Desktop and ArcGIS Online for £120 p.a.

It is possible to author Survey123 forms through a web browser, however the Survey123 Connect application provides 'smart form' functionality, using the XLSForms standard and allows the import of templates, so that is the recommended option.

XLSForm is a form standard created to help simplify the authoring of forms in Excel.

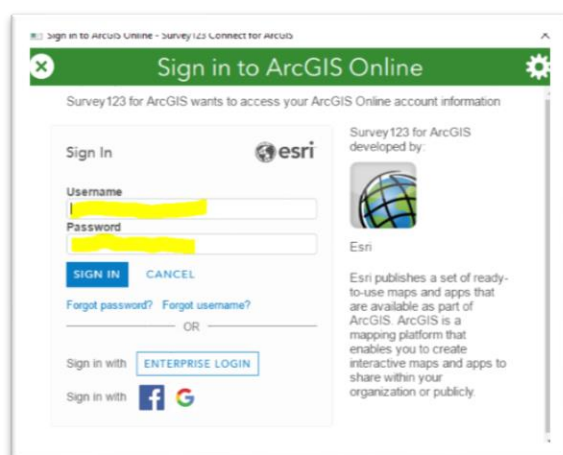
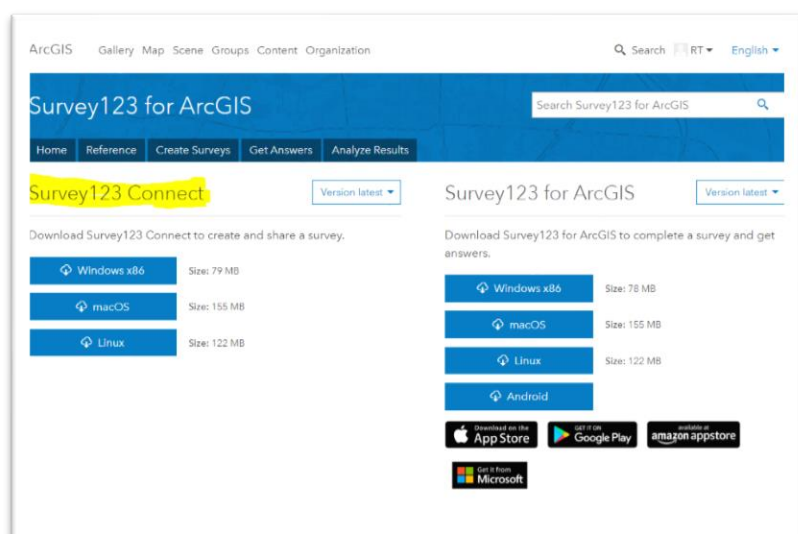
Authoring is done in a human readable format using a familiar tool that almost everyone knows - Excel.

Comprehensive [online help](#) is available and there is an active [community forum](#) where you can seek help

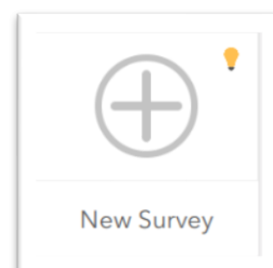
Setting up the outfall safari form

Download the [OutfallSafari.xlsx](#) template from The Rivers Trust's ArcGIS Online website and save the file to your local machine.

To import the Outfall Safari form template, you first need to [install Survey123 Connect](#).



Open Survey123 Connect and click **Sign In** and enter your ArcGIS Online credentials and click **New Survey**.



Give your Survey a title and choose **File** then click **Browse for XLSF** and select the **OutfallSafari.xlsx** file which you saved earlier.

Click **Create Survey**

The screenshot shows the 'New Survey' dialog box. The title is 'Mucky Brook Outfall Safari'. The table name will be 'Mucky_Brook_Outfall_Safari'. Under 'Select an initial XLSForm design', the 'File' option is selected. A 'Browse for XLSForm...' button is visible. At the bottom, there are 'Create Survey' and 'Cancel' buttons. The user's name 'Michelle Walker' is shown in the bottom left corner.

Survey123 Connect shows you a preview of the form design so that you can see how the questions will look when you publish it.

The screenshot shows the 'Form Preview' window for the 'Outfall Safari' survey. The form includes a welcome message, a section for 'Surveyor and Location Details' with fields for 'Your name', 'Date of survey' (30 November 2018), and 'GPS Location' (51°26'N 2°51'W ± 13354 m). There is a map showing the location. The bottom section is 'Photograph of outfall' with a prompt to photograph the outfall and any pollution impact. A 'Validate Input' button is at the bottom right. The load time on Windows is 2.3 seconds.

Click the **Open XLSForm Spreadsheet** icon (top left) to view the form designer in excel.

It is useful to have the Excel file and Survey123 Connect visible at the same time, so you can see changes in the survey form as you make them in the xlsx file. To do this hold down the **Windows** key and the **left** or **right arrow** to dock each view to opposite sides of the screen.

The OutfallSafari.xlsx form template has been based on the Alfreton Brook survey by Trent Rivers Trust. You can use it as is, or you can make changes to the questions by editing the spreadsheet.

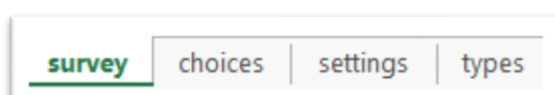
type	name	label	hint
note	Intro	Welcome to the Outfall Safari app	Please fill out the form
begin group	SurveyDetails	Surveyor and Location Details	
text	Name	Your name	Please enter your name. This
date	SurveyDate	Date of survey	
geopoint	GPSLocation	GPS Location	Click target icon to find your
image	Photo1	Photograph of outfall	location and/or click the
text	LocationDescription	Describe the location	Please photograph the
select_one bankside	Bankside	Which bank is the outfall on when	outfall and any pollution
end group		facing downstream?	Please describe the
begin group	PollutionDetails	Pollution Details	location using the nearest
select_one yes_no	OdourYesNo	Is there an odour at the outfall?	
select_one odour	Odour	Please rate the odour problem	If yes, please give more
select_one yes_no	VisualYesNo	Is there discoloration or sewage	details in the following
select_one aesthetics	Aesthetics	funous at the outfall?	See handout for guidance.
select_one visualimpac	VisualImpact	Please rate the visual appearance	If yes, please give more
select_one yes_no	SewageRagYesNo	How big is the visual impact or the	details in the following
select_one flowrate	FlowRate	outfall?	Please choose a category
text	OtherPollution	Is there sewage related debris at the	that most represents what
image	Photo2	outfall?	If 2m or above AND any
end group		List here any other forms of pollution	small or discoloration please
		at the outfall e.g. oil or fat etc	toilet paper, wipes and other
		Additional photos, if required.	sanitary items often not
			See handout for guidance.
			e.g. access points,
			surrounding sewage rag

Survey question types – here you can set the question type (view more info about each one on the types worksheet)

Survey field names – these are the field names which will appear in the database table

Survey question labels – this is the survey question text which appears on your survey form

Survey question hints – here you can provide more information for your surveyors to help them fill out the survey



There are four worksheets in the xlsx document. **Survey** contains the form

questions, **choices** contains the lists of values used in 'select_one' type questions, **settings** lets you change the title on the form and **types** contains more information about question types and formats.

You can group questions together with a title for each group, e.g. 'Surveyor and Location Details', using the **begin group** and **end group** types.

You can use form logic to only ask questions if they are relevant. For example, 'Please rate the odour problem' only appears on the form if the answer to the previous question 'Is there an odour at the outfall?' is 'Yes'. You can change this form logic in the '**relevant**' column (column L).

You can change the appearance of the questions to make them more compact, or to use drop-down lists, etc. This is set in the '**appearance**' column (column I) and you can find more information about the options on the **types** worksheet.

The form is setup to prompt the user to phone the water company if the visual impact or aesthetics scores are 10. When a user scores the visual or aesthetic impact at the highest level, a note appears in the app with the phone number hyperlinked, so the user can just click the hyperlink to phone the water company.

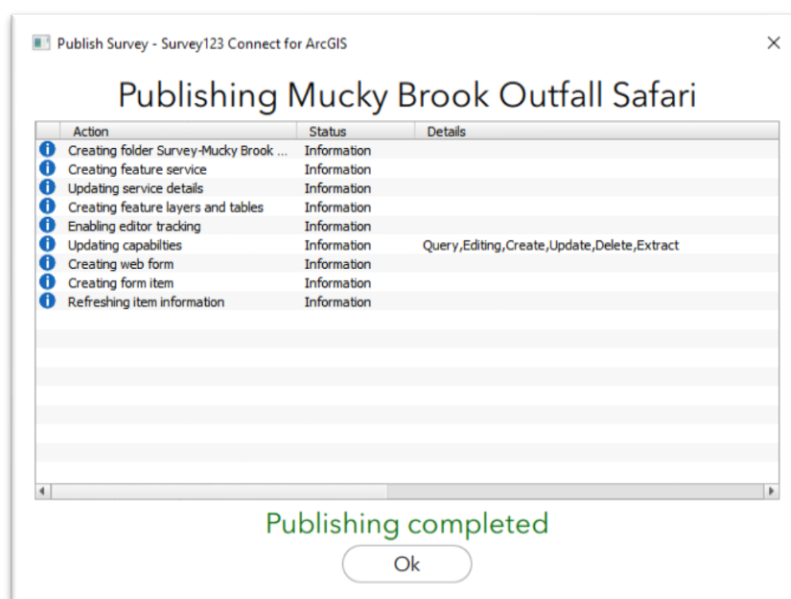
You will need to edit the phone number in cell C19 of the Survey worksheet to give your volunteers your local water company phone number. You may also wish to include the Environment Agency incident number.

In cell C19 change the phone number value highlighted in yellow below:

<u>This is a serious pollution - please report this to the Water Company immediately</u>

Once you have made any changes, save your .xlsx file and the Survey123 Connect preview will update and show you what your form will look like when published.

When you are happy with your survey layout, click **Publish** at the top left of the Survey123 interface, and then click **Publish Survey**.

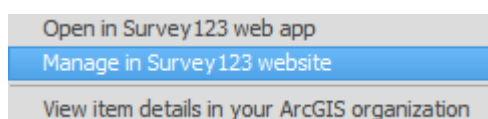


Survey123 Connect publishes the survey and creates an ArcGIS Online folder and feature service (online GIS layer) to store the data collected in your survey.

Click **OK**



Now your Survey123 Connect interface shows another icon in the top left – click **Show online survey item** and select **Manage in Survey123 website**



Login using your ArcGIS Online credentials if prompted, and then click **Collaborate**



Under Choose who can submit data to this survey, check the **Everyone** box, then check the radio button to **Open this survey in the Survey123 field app directly**.

A screenshot of a web interface titled 'Choose who can submit data to this survey:'. It has three main sections. The first section has three options: 'Everyone (Public)' (checked with a yellow highlight), 'Members of my organization (The Rivers Trust)' (unchecked), and 'Following Groups:' (unchecked). The second section is a list of groups: '1. Opportunities Details', '2. Issues Details', '3. Characteristics Details', and '4. Causes Details'. The third section is a 'Survey link:' field containing the URL 'https://arcgis/riano' (highlighted in yellow). Below the link field are three radio buttons: 'Open the survey in browser directly' (unchecked), 'Ask the user how to open the survey, in browser or in the Survey123 field app' (unchecked), and 'Open the survey in the Survey123 field app directly. (Learn more about this option)' (checked with a yellow highlight). A 'Save' button is located at the bottom right.

Copy the survey URL and then click **Save**

Give your volunteers the survey URL to open on their mobile and this will prompt them to download the **Survey123 for ArcGIS** app from the relevant location.

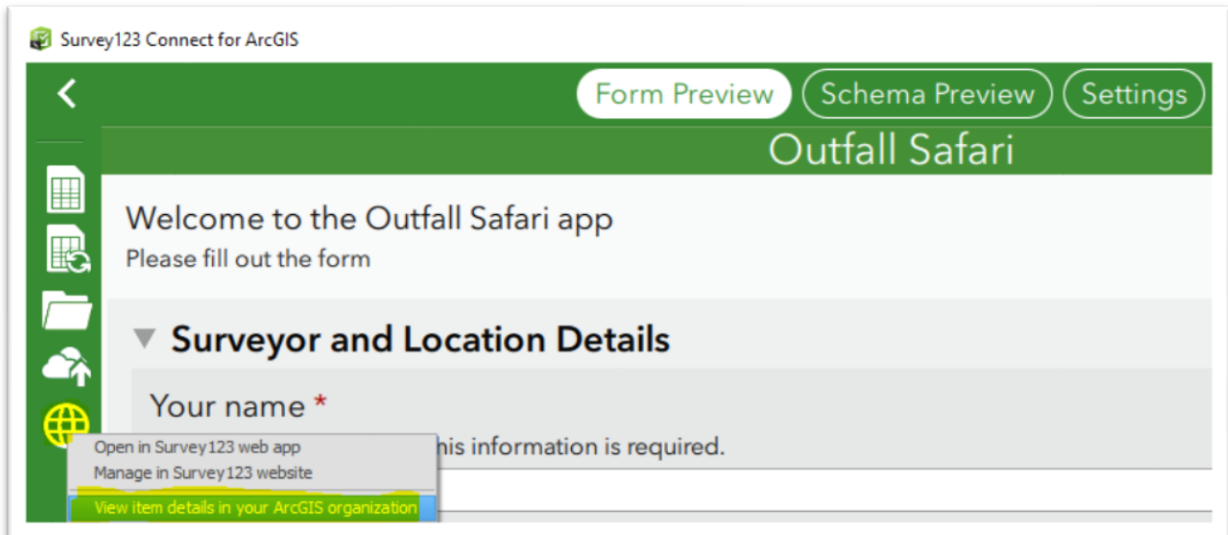
N.B. the first time they install the app it will prompt them to log in. Tell them to ignore this and just click your survey link again and this time it will open without asking for a password.

Data Management Guidance

Whilst your outfall safari is in progress, you will want to keep tabs on where your volunteers have surveyed, so that you can steer them to cover any gaps and avoid duplication. You will also want to check the data and remove any duplicate data entries, and ensure that photos are of sufficient quality, and results correlate with the photos.

Survey123 is fully integrated with the ArcGIS Online platform, so there is no need to download the data to map it with your local information, as it is already available as an online GIS layer, and the template survey form calculates the impact scores automatically.

When you create the survey using Survey123 Connect, your survey results are automatically added to a new folder called **Survey-<your survey name>** in your AGOL contents view. You can also find the data from Survey123 Connect by clicking the globe symbol and choosing **View item details in your organisation**



The screenshot displays the Survey123 Connect for ArcGIS interface. At the top, there's a green header bar with a back arrow, a 'Form Preview' button, a 'Schema Preview' button, and a 'Settings' button. Below the header, the title 'Outfall Safari' is prominently displayed. The main content area includes a welcome message: 'Welcome to the Outfall Safari app' followed by 'Please fill out the form'. A section titled 'Surveyor and Location Details' is expanded, showing a form field for 'Your name *'. A red asterisk indicates a required field. Below the form field, a message states 'this information is required.' A context menu is open over the globe icon in the left sidebar, offering three options: 'Open in Survey123 web app', 'Manage in Survey123 website', and 'View item details in your ArcGIS organization'.

The feature service contains an attribute table with all of the data from the survey, including the impact scores, which are calculated automatically on data entry.

The Rivers Trust have made available ArcGIS Online templates and example datasets and maps via the Outfall Safari gallery. You need to be a member of the Outfall Safari AGOL group to access the examples and templates. Request membership of the group by emailing [The Rivers Trust](#) with your AGOL username.

The maps can be used to monitor progress and share this with volunteers and partners, and you can create a public facing map to share restricted information with a public audience if required. The online map layers can also be used in ArcGIS Desktop to streamline formatting of the maps for the report, or you can copy the layer symbology over to your own published layer.

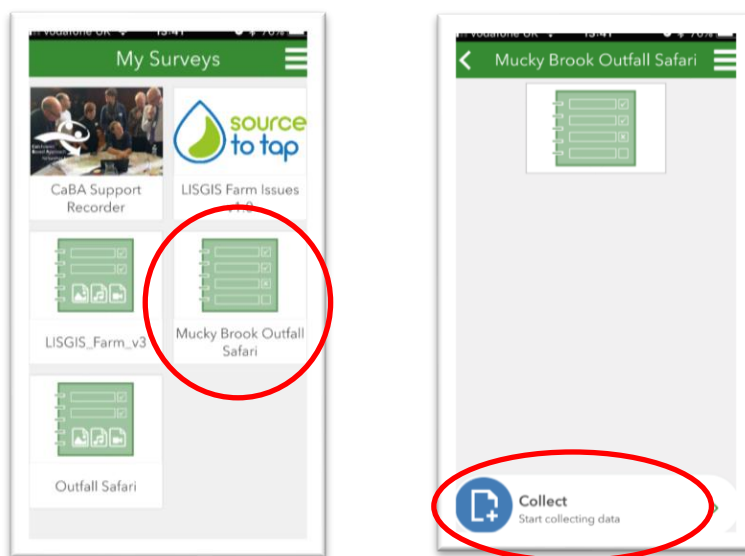
Although at the time of writing ArcGIS Online does not allow you to import a layer symbology from another layer, you can do this with ArcGIS Desktop, or you can create symbology from scratch in the Visualisation tab of the item details view. To see how we've set up the symbology on either of the demo layers, click the Visualisation tab and then click the **Change Style** icon

The test layer total score is calculated by using an expression to sum the visual impact and aesthetics scores. This is the approach that was adopted for the Alfreton Brook survey in agreement with the water company and EA. You may decide on a different method.

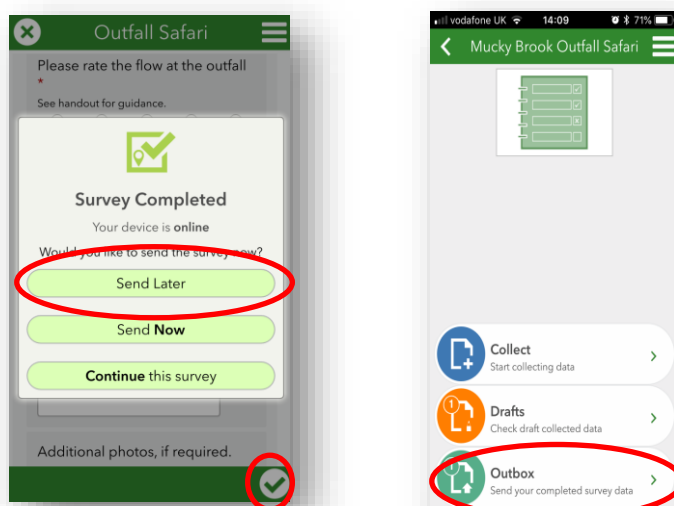
Volunteer Instructions

You will need a mobile phone or tablet in order to use the mobile app. Survey123 is available for Android, Windows, Linux and IOS (Apple) devices.

1. Click the survey link provided to you by your volunteer coordinator
2. If you don't have the **Survey123 for ArcGIS** app installed, you will be prompted to download this, and it will install and open. (N.B. the first time you install the app it will prompt you to log in. Ignore this and just click your survey link again and this time it will open without asking for a password)
3. Next time you wish to use the survey you can either click the survey url, or open the **Survey123 for ArcGIS** app, select the survey name and tap **Collect**.



4. You can collect survey points 'offline' if there is no internet or phone signal, and then upload the entries later. Click the green tick at the bottom right to finish the survey point and then choose **Send Later**.



5. To upload your survey later, click **Outbox** from the survey landing page and then click **Send**.