

Appendix 2: Allocation Systems

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1. The allocation system

1.1. Overview

The allocation system was a website designed by the Substance research team and developed by the Substance tech team. The allocation system was created to manage regional data collection. The system was used by both management and surveyors; a description of both uses is outlined in Section 1.3.

1.2. Development of the allocation system

The allocation system was designed to manage the primary sampling unit (PSU) allocations in a way that enabled surveyors to reject PSUs while maintaining the randomised sampling method. This was done by:

1. Rejected PSUs were automatically reallocated to the same surveyor for a new date of the same day type (weekday or weekend/bank holiday) within the same quarter.
2. Limiting the number of visit rejections a surveyor could make to nine within a three-month period.

These measures were designed into the system to reduce the influence that surveyors could have on when they surveyed, with the aim of limiting bias being introduced into the method.

1.3. Use of the allocation system

1.3.1. By management

The allocation system was used by management to manage and assign sampling locations. Managers had an overview login which gave them add and edit access. The management view of the system had the pages described below.

1.3.1.1. Users

This page showed a list of all surveyors and their details including name, contact details, and region they would primarily be surveying. Management had the ability to give surveyors access to the allocation system by adding them to the users list. Adding a surveyor would automatically send a

registration email to the email address of the surveyor, through which they set up their allocation system account login details.

1.3.1.2. Sites

The sites page showed a list of all secondary sampling sites (SSSs), which was uploaded to the system at the start of the project. For each SSS, the list displayed its region, site activity level, primary and second site ID, and whether it was a shore or private boat site (Figure 1).

ID	Region	SurveyType	PrimarySiteID	SecondarySiteID	FullSiteID	SiteActivityLevel	Actions
#1	East Midlands	Shore	EM_shore_1	EM_shore_1.1	EM_shore_1.1_high	High	
#2	East Midlands	Shore	EM_shore_1	EM_shore_1.2	EM_shore_1.2_high	High	
#3	East Midlands	Shore	EM_shore_1	EM_shore_1.3	EM_shore_1.3_high	High	
#4	East Midlands	Shore	EM_shore_2	EM_shore_2.1	EM_shore_2.1_high	High	
#5	East Midlands	Shore	EM_shore_2	EM_shore_2.2	EM_shore_2.2_high	High	
#6	East Midlands	Shore	EM_shore_2	EM_shore_2.3	EM_shore_2.3_high	High	
#7	East Midlands	Shore	EM_shore_2	EM_shore_2.4	EM_shore_2.4_high	High	
#8	East Midlands	Shore	EM_shore_2	EM_shore_2.5	EM_shore_2.5_high	High	

Figure 1. The list of SSSs within the allocation system, including Site ID, Region, Survey type (shore or private boat), provided Primary and Secondary Site ID, Full Site ID, and the Site Activity Level (high or low). Actions in order of icon: view, edit, delete.

1.3.1.3. Jobs

Each quarter, the selected PSUs were uploaded to the allocation system for scheduling and operational management. Once uploaded, each PSU would appear in the job list (Figure 2). Each PSU was selected by the project coordinator and assigned to the surveyor responsible for covering that region.

Jobs

Assign Job

+

Search:

Show 50 entries

Previous

1

2

3

4

5

...

65

Next

User ID	Type	Region	Date	Start Time	SurveyType	Assigned	PrimarySiteID	SecondarySiteID	Actions
1	surveyor	North East	2023-10-30	07:00	Shore	Yes	NE_shore_15	NE_shore_15.1	  
1	surveyor	North East	2023-10-27	13:00	Boat	Yes	NE_boat_5	NE_boat_5.1	  
1	surveyor	North East	2023-10-21	08:00	Shore	Yes	NE_shore_11	NE_shore_11.5	  
1	surveyor	North East	2023-10-19	10:00	Shore	Yes	NE_shore_17	NE_shore_17.5	  
1	surveyor	North East	2023-10-16	08:00	Boat	Yes	NE_boat_9	NE_boat_9.1	  
1	surveyor	North East	2023-10-11	09:00	Shore	Yes	NE_shore_16	NE_shore_16.2	  
1	surveyor	North East	2023-10-10	16:00	Boat	Yes	NE_boat_9	NE_boat_9.1	  
1	surveyor	North East	2023-10-28	06:00	Shore	Yes	NE_shore_11	NE_shore_11.6	  

Figure 2. The list of jobs within the allocation system, including User ID of the surveyor, the type of individual (Type: surveyor or admin), Region (corresponding to the region of that surveyor), Date of sample, Start Time and Survey Type (Shore or Private Boat), administration to state it has been assigned and accepted (Assigned: Yes, No), Primary and Secondary Site ID corresponding to the Site list, and Actions in order of icon: view, edit, select to assign.

1.3.1.4. Requests

Management was able to monitor waiting, accepted, and rejected PSUs through the requests page. When a PSU had been allocated but not been responded to by the surveyor, it had a status of waiting and appeared in the waiting tab. Once surveyors accepted or rejected each waiting PSU, to indicate whether they could or could not complete it, this would change the status of the PSU from waiting to accepted or rejected and the PSU would appear in the corresponding tab. Management could use the requests page to ensure that surveyors were responding to PSUs, and monitor rejection numbers and reasons for rejections.

substance.

Catchwise

Users

Sites

Jobs

Requests

Rebecca Mills

Settings

Logout

Requests

T

B

All

Waiting

Accepted

Rejected

Search:

Show

50

entries

Previous

1

2

3

4

5

...

54

Next

User ID	Type	Date	Start Time	SurveyType	PrimarySiteID	SecondarySiteID	Status	Reason for rejection	Date of Request	Actions
1	surveyor	2023-07-01	16:00	Boat	NE_boat_3	NE_boat_3.2	accepted		2023-06-22 09:19:02	
1	surveyor	2023-07-13	11:00	Shore	NE_shore_4	NE_shore_4.2	accepted		2023-06-22 09:19:02	
1	surveyor	2023-07-15	13:00	Boat	NE_boat_9	NE_boat_9.1	accepted		2023-06-22 09:19:02	
1	surveyor	2023-07-18	07:00	Boat	NE_boat_10	NE_boat_10.2	accepted		2023-06-22 09:19:02	
1	surveyor	2023-07-	16:00	Boat	NE_boat_10	NE_boat_10.1	accepted		2023-06-22	

Figure 3. The Requests for surveys, as received by the surveyor in the allocation system. This includes the survey User ID, the type of individual (Type: surveyor or admin), Date of sample, Start Time and Survey Type (Shore or Private Boat), Primary and Secondary Site ID corresponding to the Site list, Status as to whether they had accepted or reject, and reason for rejection if applicable (open text box), Date of Request sent from the Jobs and Actions in order of icon: view and delete.

1.3.2. By surveyors

Each surveyor had an individual log in for the allocation system. The surveyor's view of the system consisted of a requests page, a calendar, and a link to the sampling location map (outlined in Section 2).

1.3.2.1. Requests

When a PSU (or 'job') was allocated to a surveyor, its details appeared on that surveyor's requests page. Details included date, start time and secondary site ID. The requests page had four tabs: all, waiting, accepted, rejected.

When a PSU was first allocated to a surveyor, it had a status of waiting and appeared in the waiting tab. Surveyors were able to click to accept or reject each waiting PSU to indicate whether they could or could not complete it. This would change the status of the PSU from waiting to accepted or rejected and the PSU would appear in the corresponding tab.

1.3.2.2. Calendar

Accepted PSUs appeared in the surveyor's calendar, showing the secondary site ID and the start time, and could be imported into external personal calendars.

2. Sampling location map

The sampling locations map was created and hosted by Cefas. The map was used to inform surveyors and management of the locations of primary sampling sites (PSSs) and secondary sampling sites (SSSs) in England and Wales.

The PSS and SSS were displayed as coloured polygons overlaid on a Leaflet OpenStreetMaps (<https://rconnect.cefas.co.uk/content/69fc27f5-9187-4f00-8f0f-b6271b98d737/>). A filter search enabled users to find the PSS and SSS by Region and Activity Level. Each sampling unit was coloured to provide clear polygons of where the units began and ended. An example of the sampling location map with a filter is shown in Figure 4.

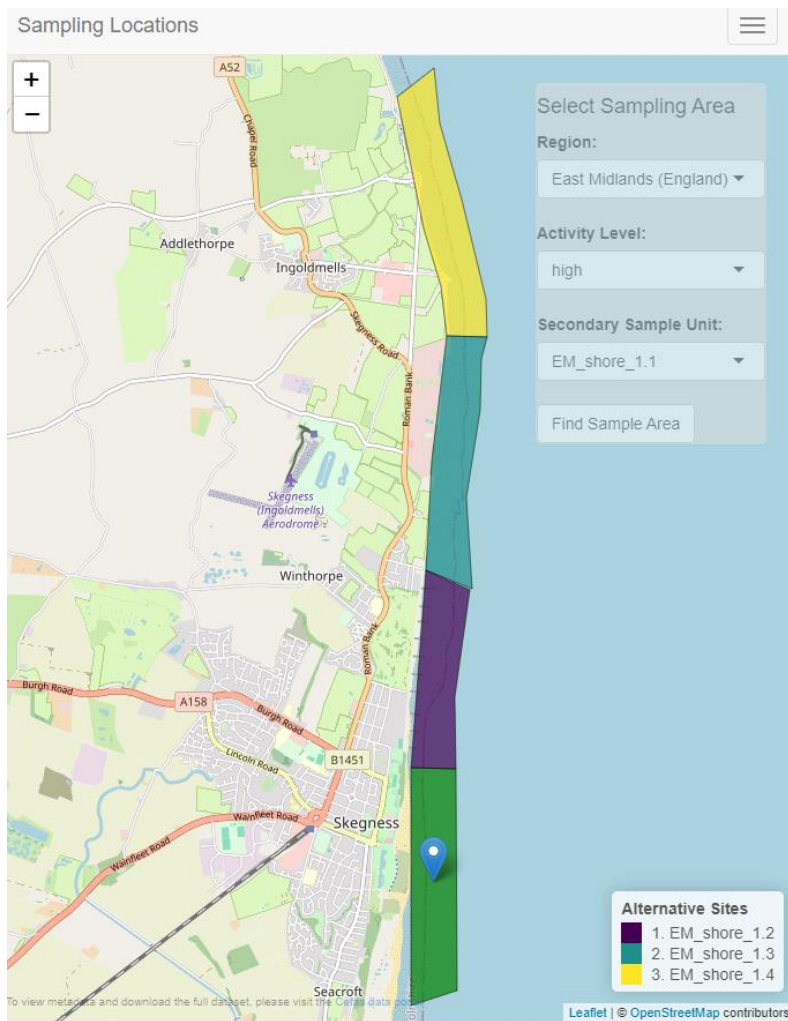


Figure 4. The Sampling Locations Map, filtered for SSS EM_shore_1.1. This SSS is shown with a marker in the green polygon. Alternative sites are shown in different coloured polygons with an alternative sites key in the bottom right hand corner.

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