One Health Harmful Algal Bloom System (OHHABS) Guidance: Getting Started and Technical Features

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Centers for Disease Control and Prevention
National Center for Emerging and Zoonotic Infectious Diseases

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This document was prepared by CDC OHHABS staff.
For general questions on reporting or the guidance document, email NORSWater@cdc.gov.
To access more information about OHHABS, visit the OHHABS public website at CDC's OHHABS website.

1. Introduction

This guidance document is a technical reference manual for local, state, and territorial public health professionals who will report harmful algal blooms (HABs) and HAB-associated human or animal illnesses to the One Health Harmful Algal Bloom System (OHHABS).

OHHABS is a web-based reporting system for HAB and HAB-associated illness surveillance. For the purpose of providing guidance in this document, the term "HAB event" will be used to describe both HABs and HAB toxins in water or food. OHHABS has been designed to collect environmental data about HAB events and case-based data for HAB-associated human cases or animal cases of illnesses. The goal of OHHABS is to collect information about HAB events and HAB-associated human cases and animal cases of illnesses to enhance the understanding of HABs and HAB-associated illnesses and to prevent the occurrence of HAB events and HAB-associated illnesses. Because HABs affect humans, animals, and the environment, OHHABS uses a One Health approach for reporting. One Health is a concept that recognizes human health is connected to animal health and the environment. OHHABS was developed as a collaboration between state and federal partners to collect and integrate environmental HAB data, human case data, and animal case data for HAB-associated illness surveillance.

HAB-associated outbreaks (≥ 2 human cases of illness) can still be reported to the National Outbreak Reporting System (NORS) to document aggregate illness data for an outbreak. However, detailed information about HAB events (e.g., HAB in a lake, HAB toxins in water or food) and single cases of HAB-associated human or animal illnesses can be reported to OHHABS.

2. What can be reported to OHHABS?

OHHABS is an event-based reporting system for HAB events and HAB-associated illnesses. Event-based reporting may include signs of a HAB event or signs of human or animal illnesses during or after any potential HAB exposure. OHHABS is not intended to collect data used for routine water monitoring purposes. However, a HAB event may be identified and reported as a result of routine water monitoring efforts (e.g., routine water monitoring detects HAB toxins in a water body), and therefore some water monitoring data may be included as supporting information.

OHHABS collects information about a HAB event and HAB-associated human and animal cases of illnesses. The following types of events can be reported to OHHABS:

- HAB-associated events for HABs found in fresh, brackish, or marine waters in a single state or in multiple states.
- HAB-associated events for HAB toxins found in any food items (e.g., fish, shellfish, nutritional supplements).
- HAB-associated exposures (e.g., foodborne, waterborne) or illnesses for single case of humans or animal illness.

For assistance with reporting HAB-associated foodborne or waterborne events or illnesses, please refer to OHHABS Guidance documents on the OHHABS website.

Summary of What Can Be Reported to OHHABS:

Harmful Algal Bloom (HAB) events

- All water body types (e.g., fresh, marine, brackish)

Harmful algal blooms in any water body may be reported to OHHABS. If no HAB is observed but illnesses or environmental conditions suggest the presence of a HAB event, environmental data may still be reported.

- The most likely food source (e.g., seafood catch or harvest location) for foodborne HAB-associated illnesses with no observed HAB event.

Human Cases

- Single human cases

OHHABS collects human illness data at the level of a single case. Multiple cases may be linked to a single HAB event.

Note: Outbreaks (≥ 2 persons linked epidemiologically by time, place, or exposure) are reported to NORS. Data are reported to NORS in aggregate, that is, one report for the entire outbreak with no case level data. Data are reported in OHHABS by case of illness, with event information in one report. If multiple people became ill following a HAB exposure, please submit both a NORS report to capture outbreak data and an OHHABS report to capture case level data.

Animal Cases

All animal types:

- Domestic pets (e.g., dogs, cats, parrots, guinea pigs, etc.)
- Livestock (e.g., cattle, sheep, goats, chickens, pigs, horses, etc.)
- Wildlife non-domesticated animals (e.g., birds, sea lions, fish, deer, etc.)

OHHABS collects animal illness data at the level of a single case or at the group level. Single animal cases can be reported individually (e.g., single dog, single sea lion) or at the group level for multiple animal cases (e.g., fish kill, herd of cattle, flock of birds). Users can indicate whether they are reporting a single case or a group of animals.

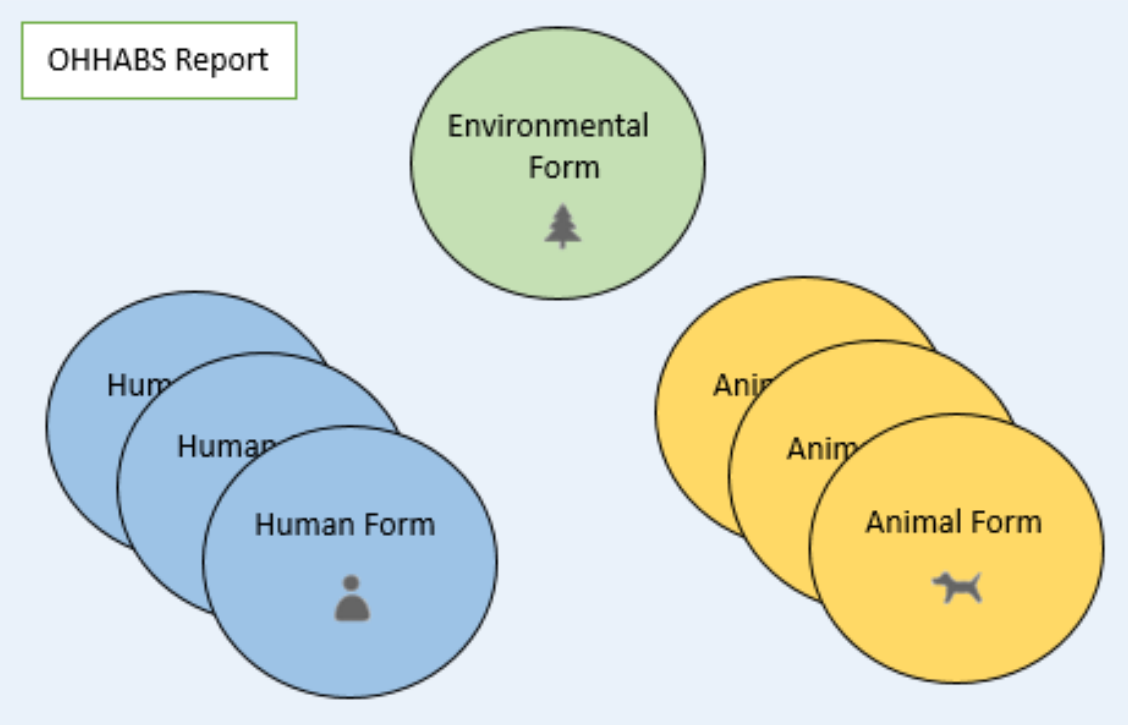
For more information regarding HAB events, human cases, or animal cases, please refer to the event and case definition documents located on the OHHABS website. For more information on how to report environmental HAB data, human case data, or animal case data, please refer to the OHHABS Form Guidance documents on the OHHABS website.

3. OHHABS Reports

An OHHABS report is comprised of three different electronic sections or “Forms”: the Environmental Form, the Human Form, and the Animal Form.

- The Environmental Form collects descriptive environmental information about a HAB or HAB-event. It includes questions about relevant dates, the geographic location, the water conditions, environmental samples (e.g., water samples, seafood meal remnants), and any sample testing performed.
- The Human Form collects descriptive information about a person (e.g., age, sex), the type of exposure, the setting of exposure, the signs and symptoms of illness, health history, and clinical testing information. No personally identifiable information is collected within the Human Form.
- The Animal Form collects descriptive information about an animal, the type of exposure, the setting of exposure, the signs of illness, health history, and clinical testing information. For companion animals (e.g., pet dogs, pet birds, pet cats), no personally identifiable information about the owner is collected within the Animal Form

A report created in OHHABS will contain only one Environmental Form but may contain multiple Human Forms or Animal Forms.



4. Minimum Reporting Requirements for OHHABS

OHHABS is a voluntary reporting system and reporting to OHHABS is not mandatory. However, to report information about a HAB event, HAB-associated human case of illness, or HAB-associated animal case of illness, a few key pieces of information are required in OHHABS. Depending on what type of HAB event or HAB-associated illness is being reported to HABs, different pieces of information are required.

- **Reporting a HAB event: Data required**
  - **Dates:** One of the following dates must be indicated:
    - Date that the bloom was first observed **OR**
    - Date of notification to Local, Territory, Tribal, or State Health Authority **OR**
    - If no bloom date is available, select one below and explain in Date Remarks
  - **State/Jurisdiction:** The location (i.e., state, territory) where the HAB event occurred or for foodborne events, where the seafood was caught or harvested.
- **Reporting a human case: Data required**
  - **Dates:** One of the following dates must be indicated:
    - Date of illness onset, **OR**
    - Date of notification to Local, Territory, Tribal, or State Health Authorities
  - **Exposure State/Jurisdiction:** The location (i.e., state, territory) where the exposure for the human case occurred.
- **Reporting an animal case: Data required**
  - **Single Animal or Group of Animals:** Indicate whether a single animal case (e.g., dog, duck, sea lion) or a group of animal cases (e.g., fish kill, flock of birds) were affected.
  - **Dates:** One of the following dates must be indicated:
    - Date of illness onset,
    - Date of discovery, **OR**
    - Date of death
  - **Exposure State/Jurisdiction:** The location (i.e., state, territory) where the exposure for the animal case(s) occurred.

For more information about reporting environmental HAB data, human case data, or animal case data, please refer to the OHHABS Form Guidance documents on the OHHABS website.

5. Who Can Use OHHABS?

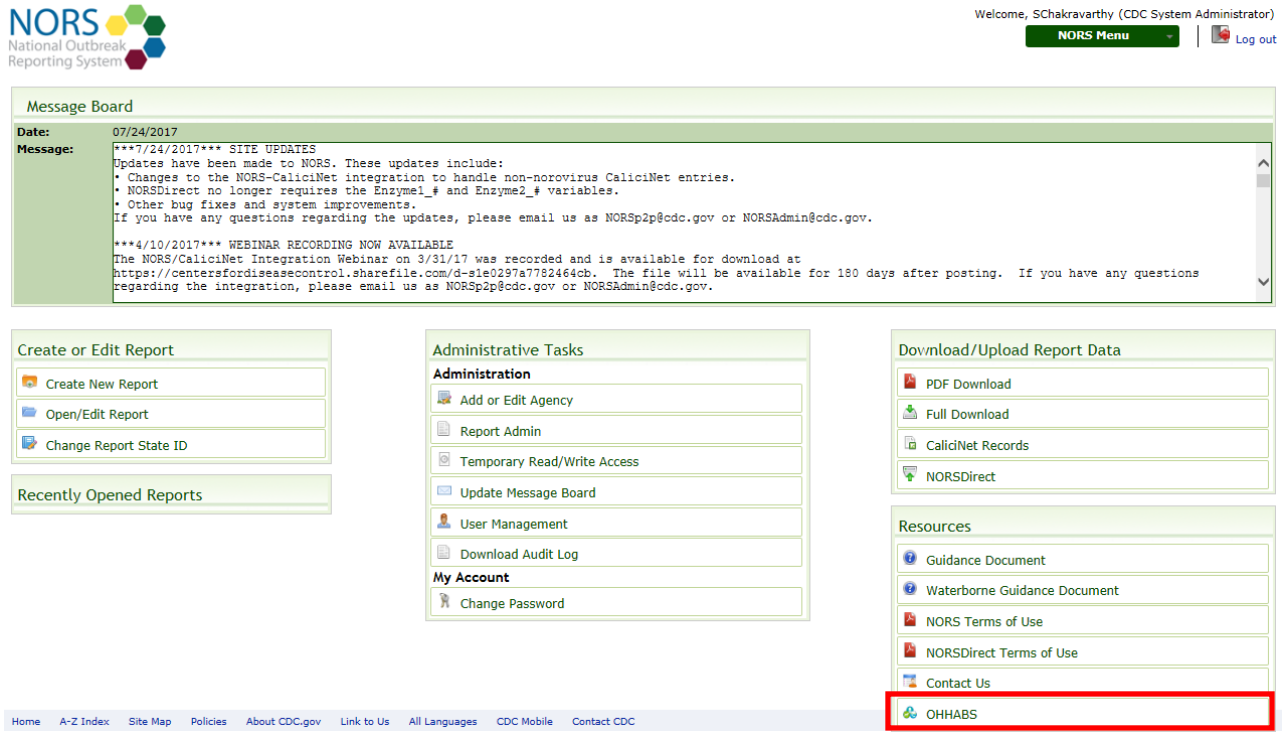
State, local, and territorial public health agencies can access and use OHHABS. Public health agencies and staff who manage NORS reserve the right to grant OHHABS access to non-public health users (e.g. state environmental agencies). New users must contact their state's NORS Reporting Site Administrator (RSA) to gain access to OHHABS. For assistance on identifying or contacting your state's NORS RSA, please contact NORSAdmin@cdc.gov.

6. Login Process

OHHABS users can login and access OHHABS through two ways: 1) through a link in NORS or 2) by logging in directly to the OHHABS site.

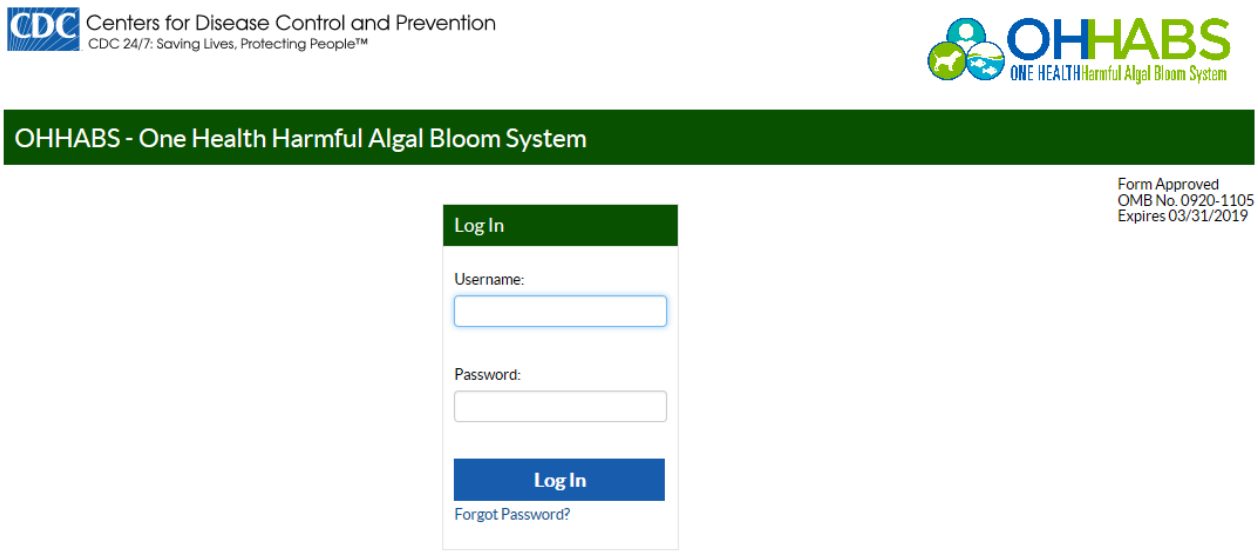
6.1 NORS Login

OHHABS users with access to NORS may login into NORS and access OHHABS through the Harmful Algal Blooms hyperlink in the Resources box.



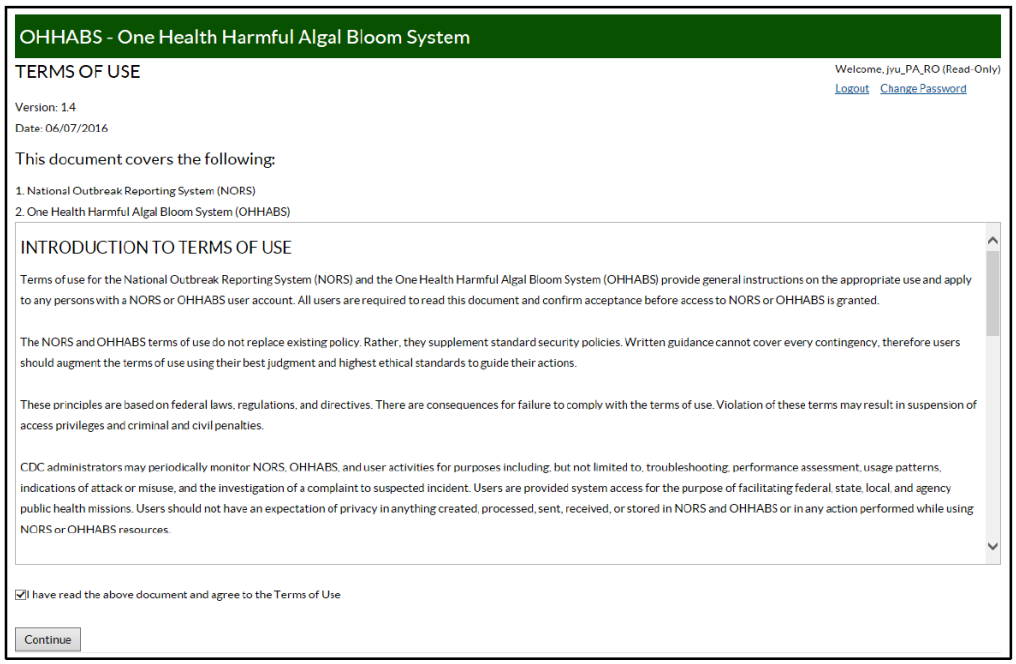
6.2 OHHABS Login

OHHABS users can log into OHHABS directly on the OHHABS site. The link to log in directly is provided with a new user's OHHABS account information.



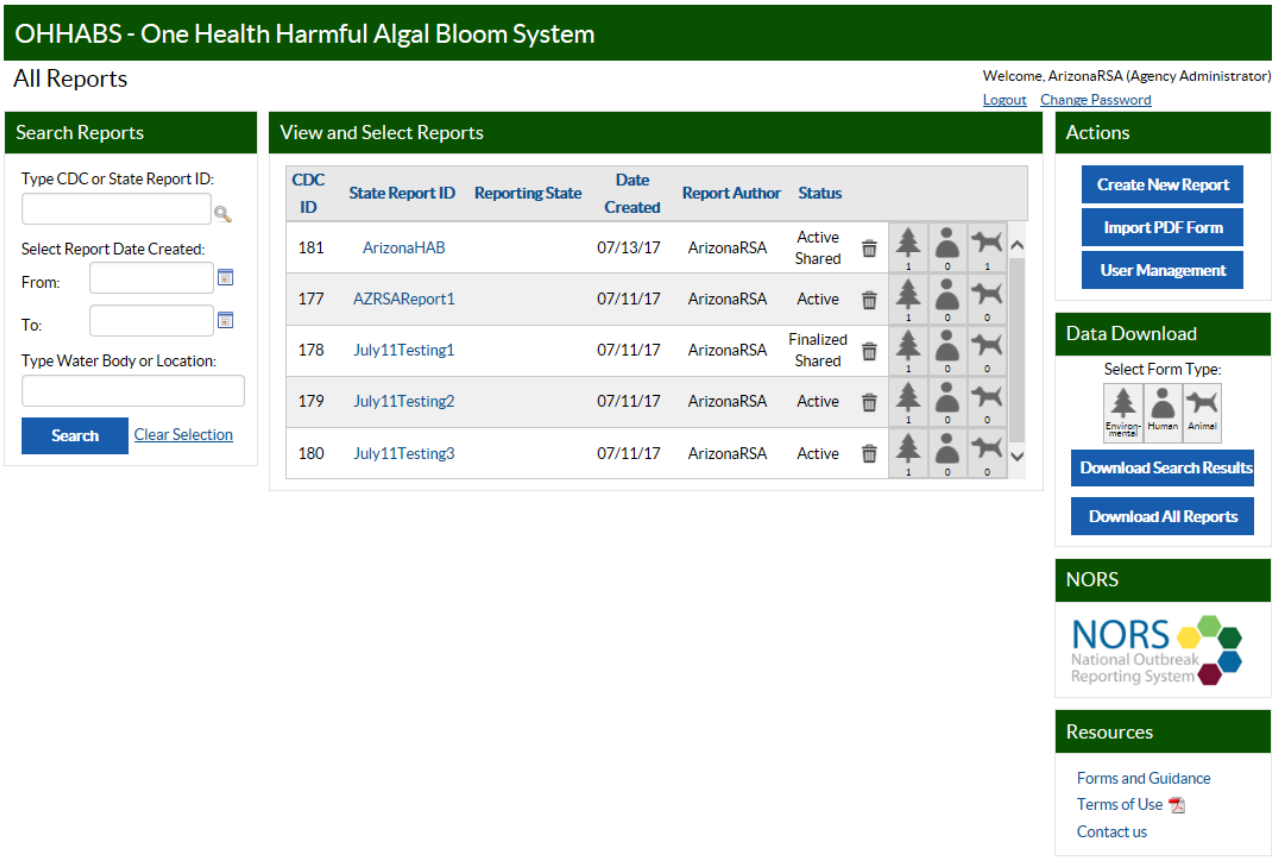
7. Terms of Use

When OHHABS users log into OHHABS for the first time, they will be prompted with a Terms of Use agreement. New OHHABS users must agree to the Terms of Use before accessing OHHABS and entering data into the system.



8. OHHABS Home Page

Users will be directed to the OHHABS home page after they have logged in and agreed to the Terms of Use. The home page has multiple sections and features.



8.1. Search Reports

In the Search Reports box, users can search for existing reports by variables including the “CDC Report ID” (automatically assigned when a report is created), the “State Report ID” (assigned by the state when the report is created), the “Report Date Created” (this can be searched as a date range), and the “Type Water Body or Location” (water body name or the location). Click the “Search” button to complete the report search. Click the “Clear Selection” link to clear the search options and view reports in your agency.

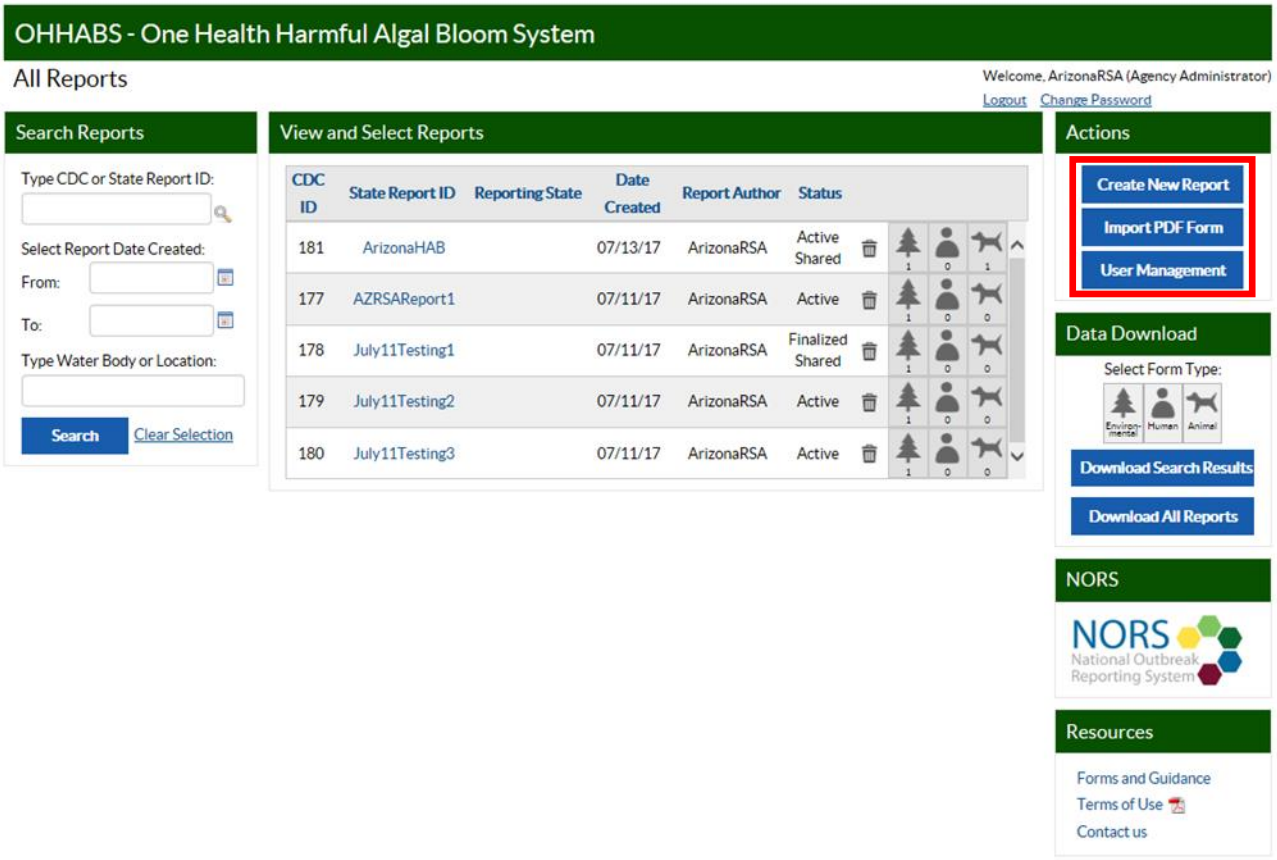
8.2. View and Select Reports

In the View and Select Reports table, users can view existing OHHABS reports within their jurisdiction (e.g., state, reporting site). Each row in the View and Reports table represents an existing OHHABS report with key summary information from the report:

- **CDC Report ID** – This is a system-assigned, numeric value. The ID that is assigned is unique to each report created in OHHABS.
- **State Report ID** – This is a unique identification name assigned by the state, local, or territorial health department. This ID is an alpha-numeric value with a 50 character maximum assigned by the state report author. The "State Report ID" must be unique and can only be used once within a state or territory. It may be edited after it has been assigned.
- **Location** – This is the geographic location reported in the Environmental Form. The geographic location may include the name of the water body in which the HAB occurred or for foodborne events, where the seafood was caught or harvested.
- **Date Created** – This is the date that the OHHABS report was created.
- **Report Author** – This is the OHHABS user who created the report.
- **Status** – This is a state-managed variable for an OHHABS. Reports that a state is working on are "*Active*". Reports that have been completed may be changed to "*Finalized*" by OHHABS users with administrative rights.
- **Trash Can Icon** – The trash can icon is button that allows users to delete an existing OHHABS report. This function will delete all data in the report.
- **Summary Images** – The summary images represent the number of forms created within an existing OHHABS report. There are three images: a tree (Environmental Form), a human torso and head (Human Form), and a dog (Animal Form). Under each image is a number that corresponds to the number of forms within the report.

8.3. Actions

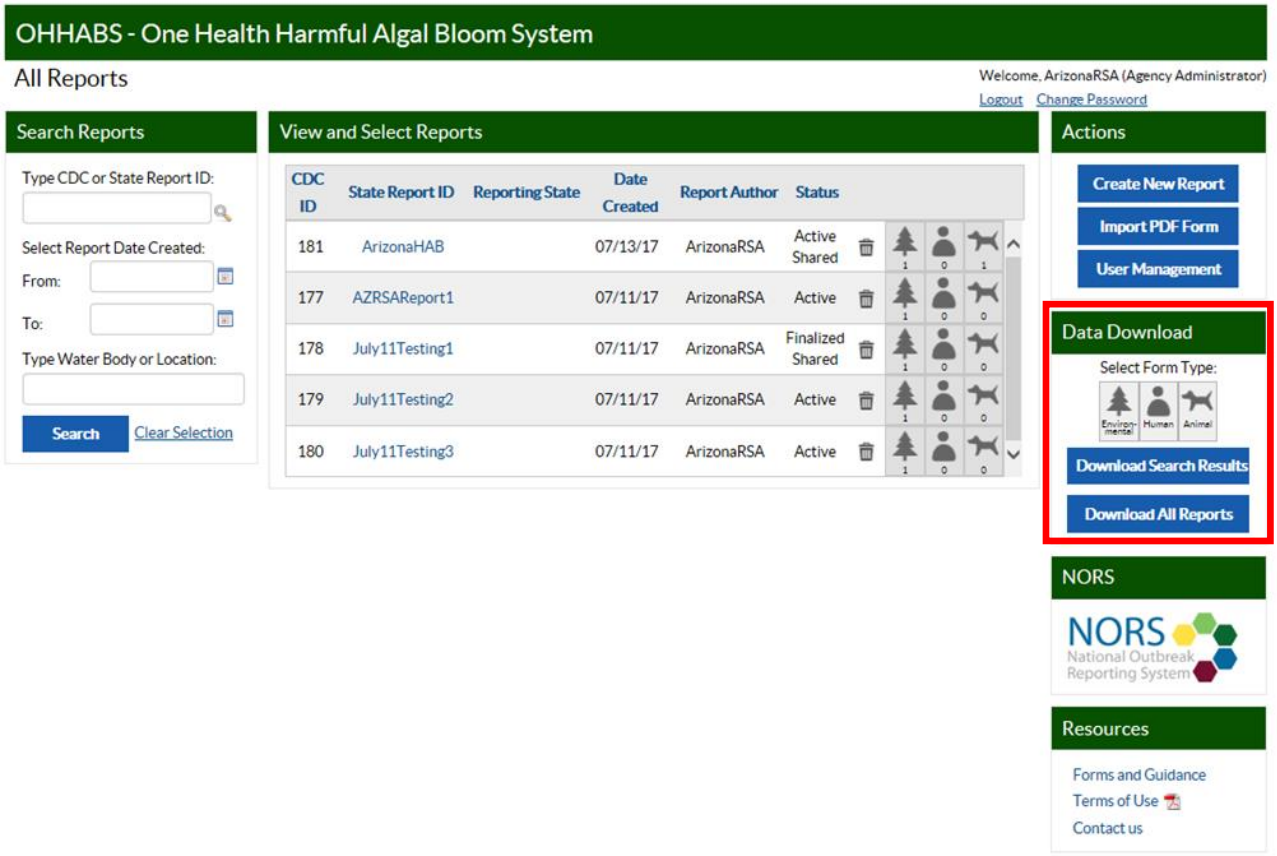
In the Actions box, users can create a new report or manage user accounts.



- **Create a New Report:** Clicking on this button will start the process for creating a new report.
- **PDF Import**: Clicking on this button will open the PDF Import feature. This button is only visible for user types with administrative permissions.
- **User Management**: Clicking on this button will open the user management page. This button is only visible for user types with administrative permissions.

8.4. Data Download

In the Data Download box, users can download report data in a relational excel database within their reporting site.



Download Report Data: To download OHHABS report data, select the type(s) of data you want to download. Click on the "Download Search Results" or the "Download Report Data" button to download OHHABS report data.

- **Select Form Type:** Users must select at least one Form Type (i.e., Environmental, Human, Animal) to download report data. Users can select and deselect a Form Type by clicking on the Environmental Form, Human Form, and Animal Form icons.
- **Download Search Results:** In conjunction with selecting form type(s) to download, clicking on the "Download Search Results" button will download report data filtered in the Search Results box.
- **Download All Reports:** In conjunction with selecting form type(s) to download, clicking on the "Download All Reports" button will download report data for reports the user can view in their reporting site or agency.

8.5. NORS

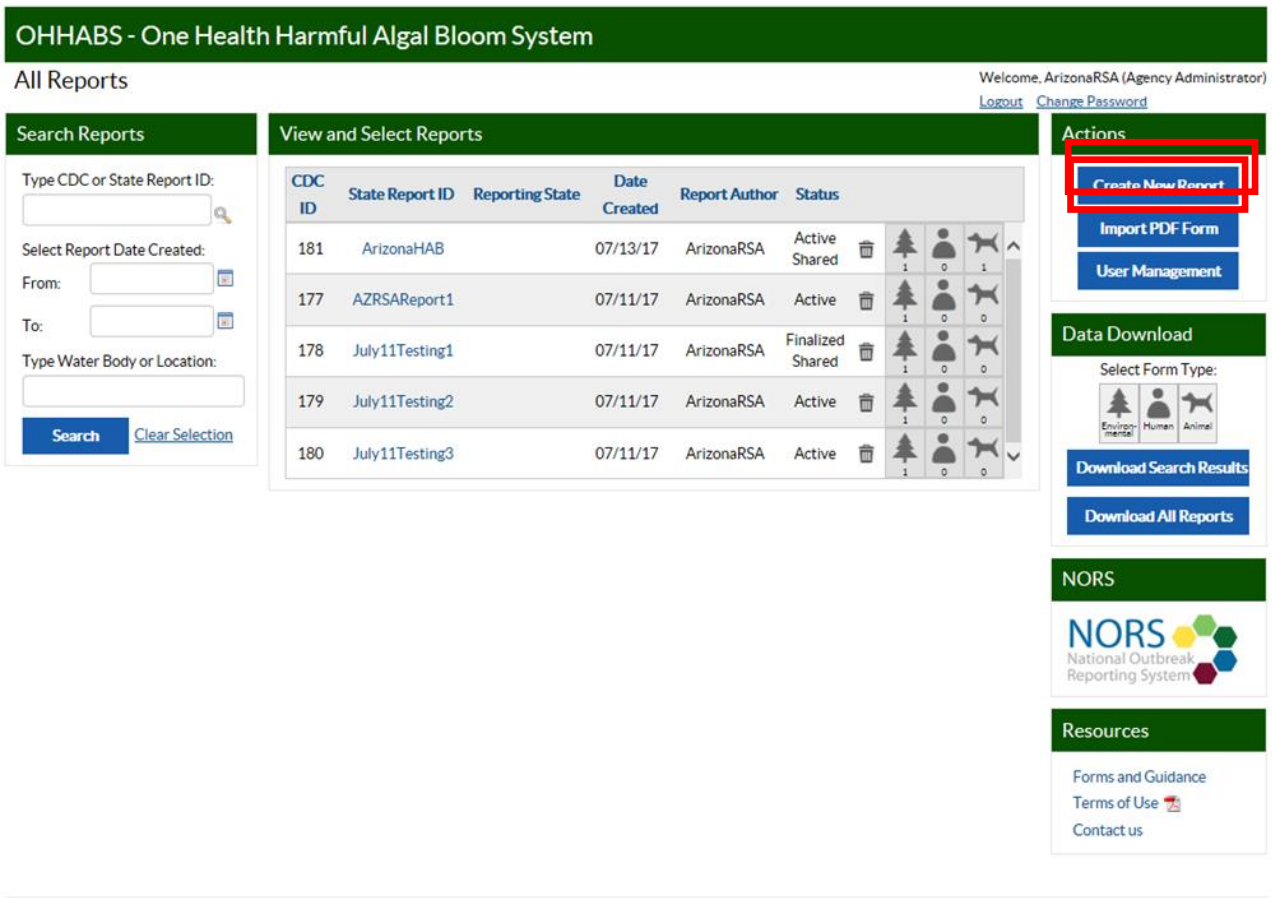
In the NORS box, users have the option to navigate directly to NORS login page.

8.6. Resources

In the Resources box, users can find contact information for CDC OHHABS staff and other resources.

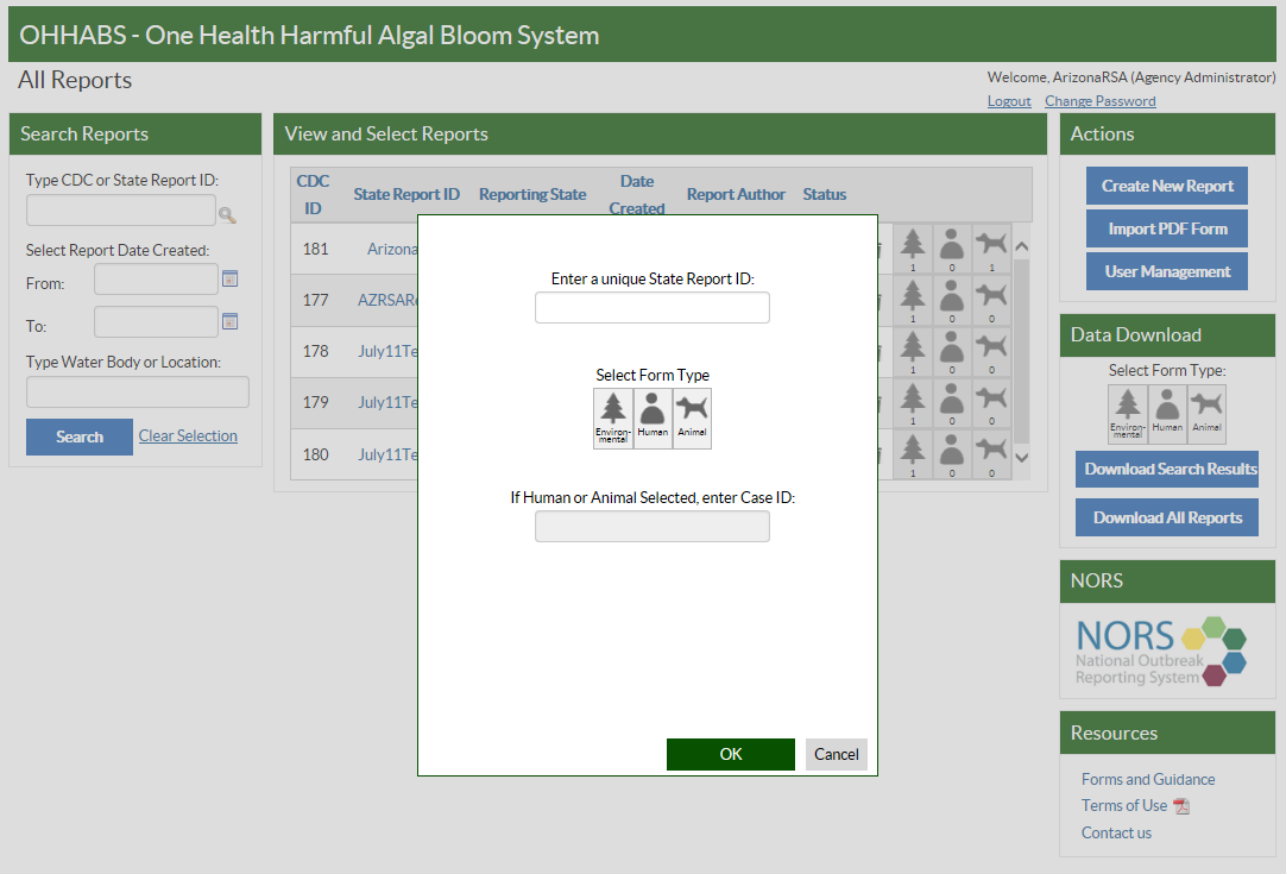
9. Create a New OHHABS Report

From the OHHABS home page, users can create a new report by clicking the “Create a New Report” button in the Actions box.



9.1. Create a New Report Window

When users click in the “Create New Report” button, a pop-up window will appear. In the pop-up window, users will be prompted to enter information about the new OHHABS report including the: “State Report ID”, the “Form Type”, and the Case ID if applicable.



Enter a unique State Report ID

The “State Report ID” is a unique identification (alpha-numeric) with a 50 character maximum for the report. Each state, local, or territorial health department decides how to name their reports. The assigned “State Report ID” must be unique and can only be used once within a state or territory.

Select Form Type

Users have the flexibility to create a report starting with one of the three forms: the Environmental Form, the Human Form, or the Animal Form. One of these options must be selected.

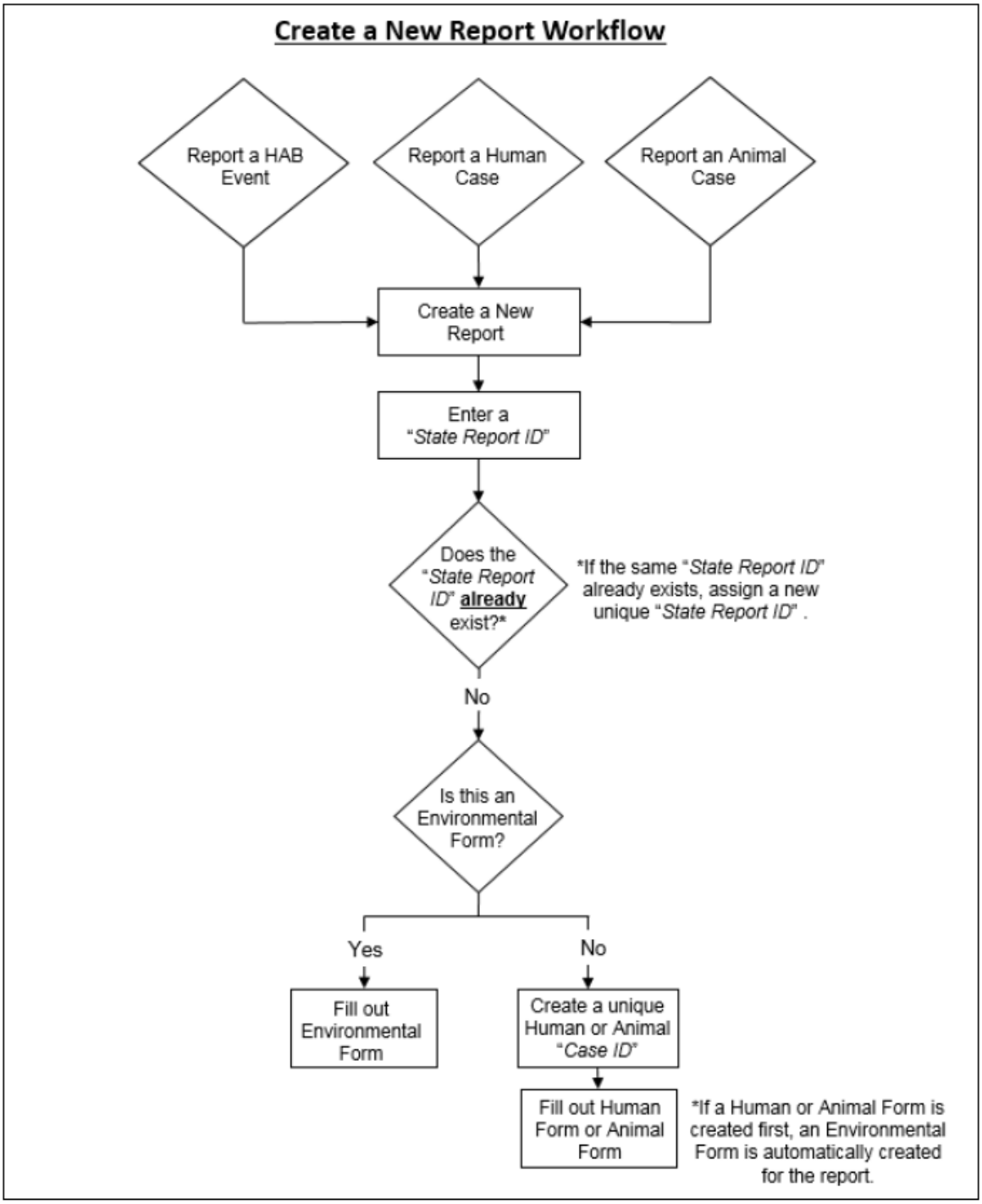
If Human or Animal Selected, enter Case ID

If users choose to create a report starting with a Human Form or Animal Form, they will be prompted to create a unique (alpha-numeric) Case ID with a maximum of 50 characters. For the Human Form the, the Case ID is referred to as the “Human Case ID”, and for the animal form the Case ID is referred to as the “Animal Case ID”. Each state or territory decides how to name their cases. The Case ID cannot be the same as the State Report ID. The Case ID must be unique within a report as it differentiates individual human and animal cases within a report. For example in a report, the human Case ID cannot be the same as the animal Case ID.

9.2. Create a New Report Workflow

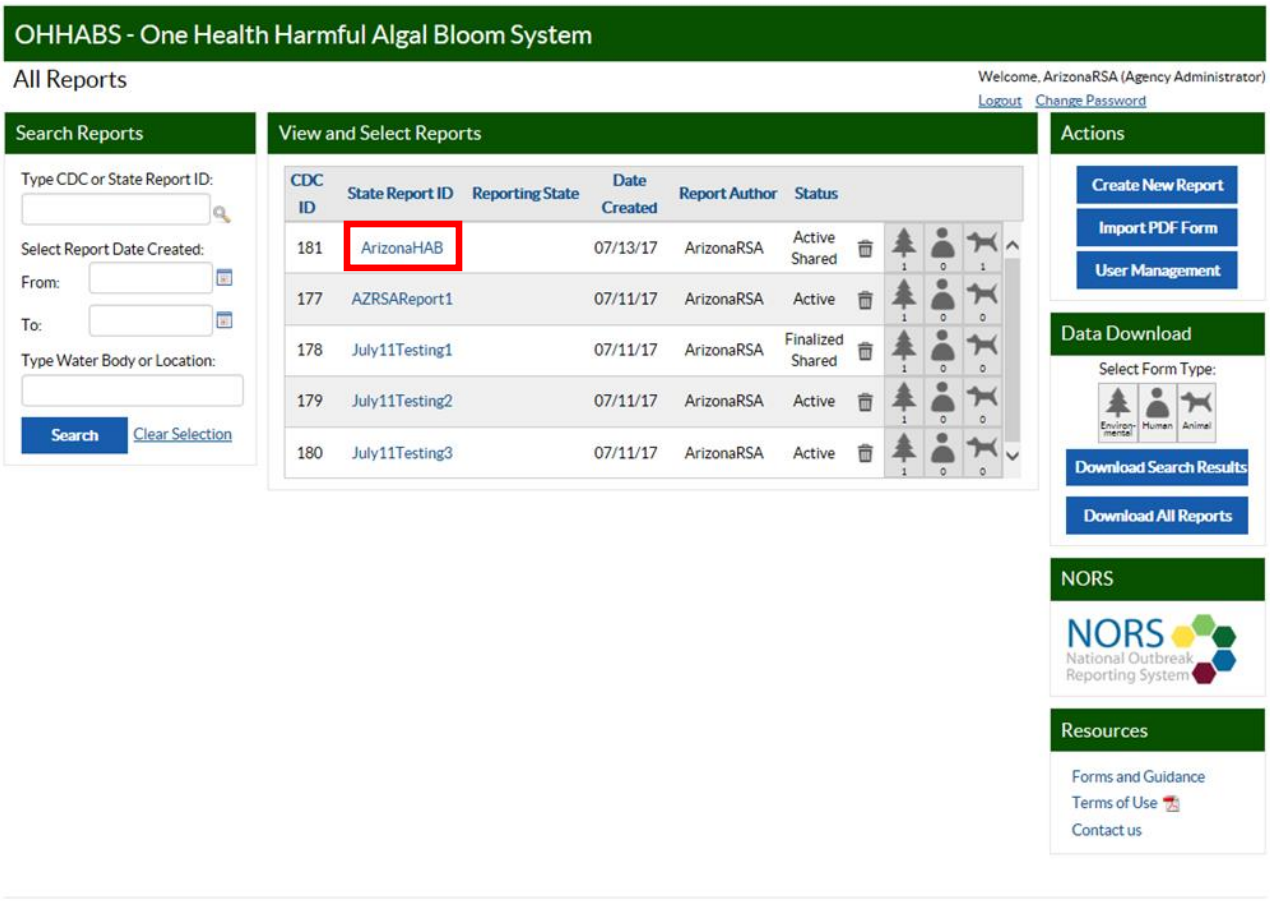
Users can create a new OHHABS report starting with a HAB event, a human case, or an animal case. Users will be prompted to enter information about the report including entering the "State Report ID", selecting the "Form Type", and (if applicable for a Human or Animal Form) the "Case ID".

*Note: If a Human Form or Animal Form is created first in the report, an Environmental Form is automatically created to capture environmental data related to the human or animal case.

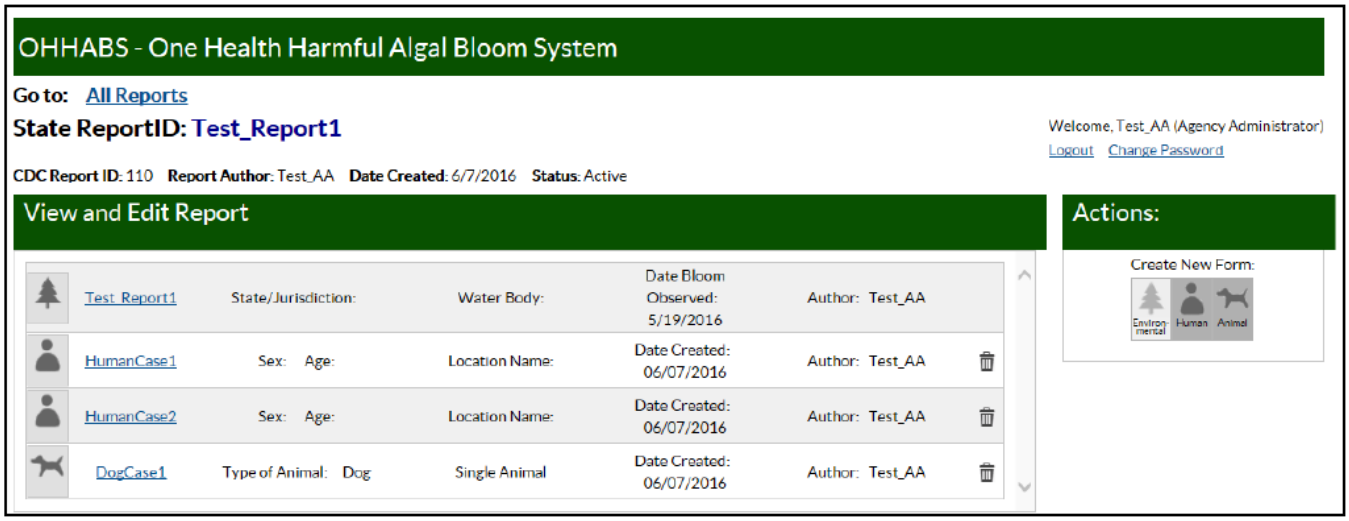


10. Edit an Existing OHHABS Report

Users may edit (e.g., add/delete forms, edit existing form data) existing reports. To edit an existing report, search for the report on the OHHABS Home Page and click on the "State Report ID" link, which will bring you to a summary page for the report



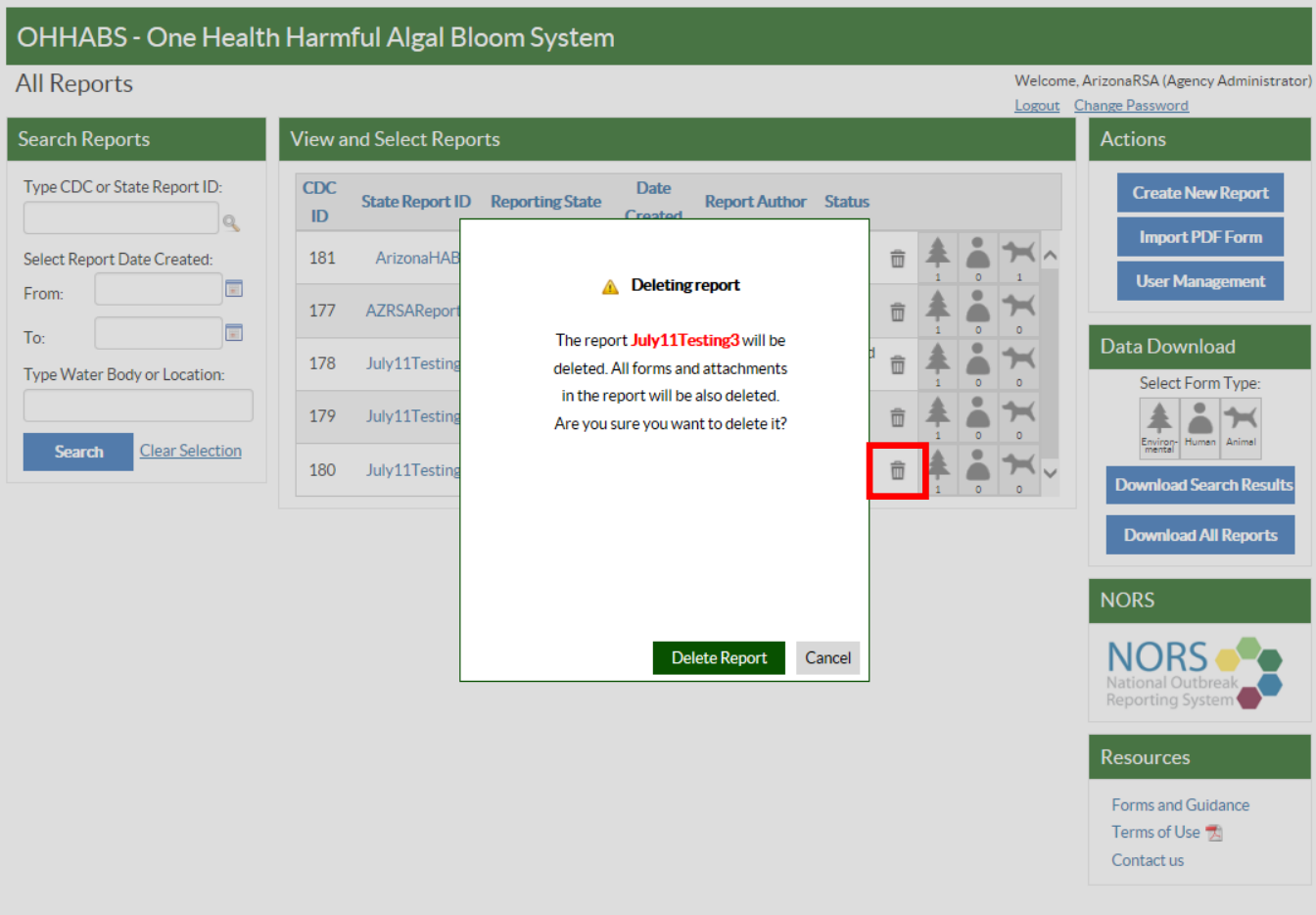
The summary page for a report is called the View and Edit Report page. From this page, users can return to the OHHABS Home Page by clicking the “All Reports” link at the top of the page, view the “State Report ID”, view details of the report including the “CDC Report ID”, the “Report Author”, the “Report Creation Date”, and the “Status”. On this page, users can view and edit the forms created within the OHHABS report, or create a new form in the report in the Actions box. In the View and Edit Report table, the Environmental Form is always listed first followed by any Human Forms then Animal Forms.



In the View and Edit Report table, summary information for each form created in the report is displayed to help the user identify the form they are looking for more quickly. The summary information is based on information that was previously entered in the form(s).

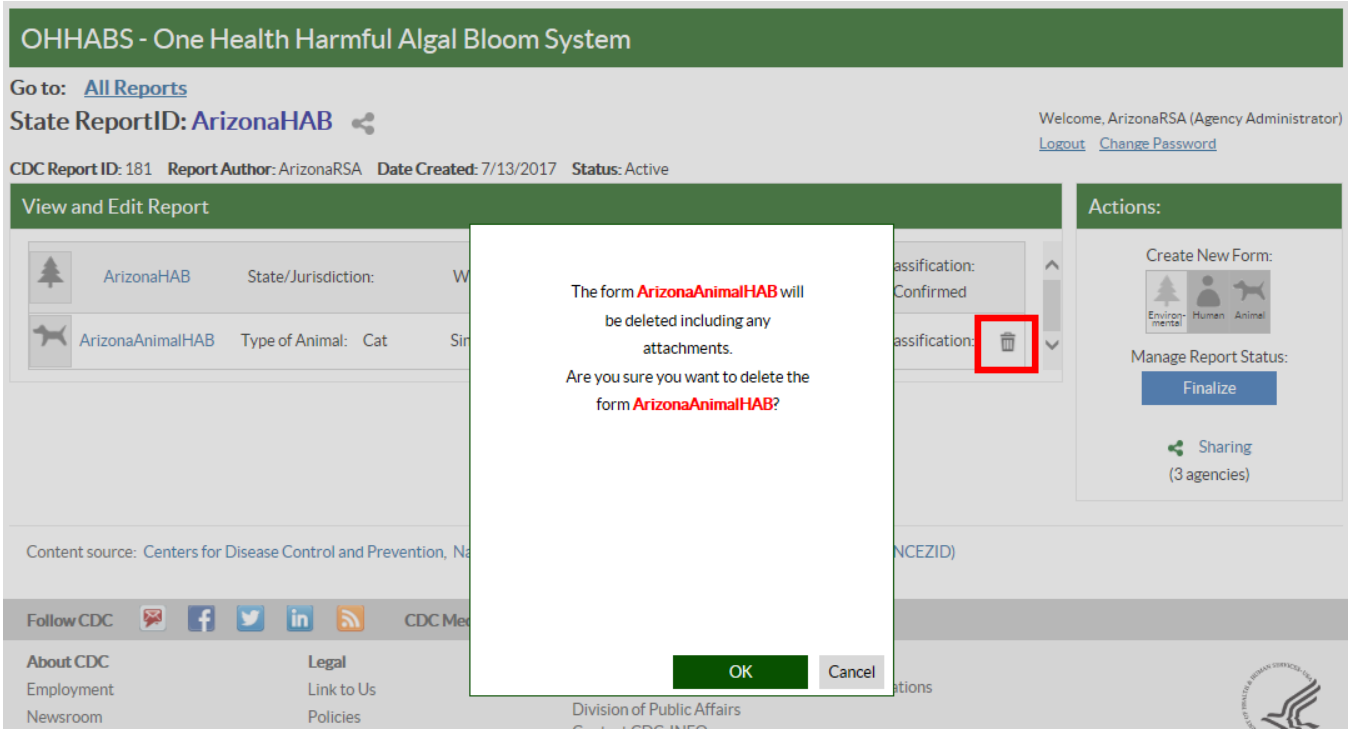
10.1. Delete an Existing OHHABS Report

In the View and Select Reports table, an existing OHHABS report can be deleted by clicking the trash can icon in the row of the report you want to delete. When users click on the trash can icon, they will be prompted with a warning pop-up window to confirm that all forms, information, and attachments will be deleted when the report is deleted. Users must select OK to complete deletion of the report.



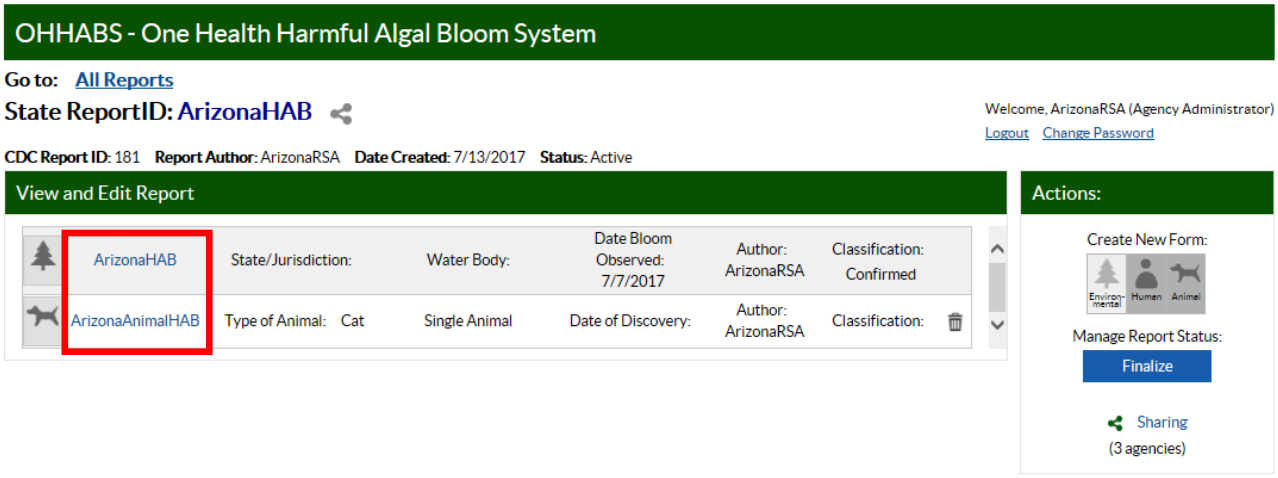
10.2. Delete an OHHABS Form within a Report

In the View and Select Reports table, an OHHABS Form can be deleted by clicking the trash can icon in the row of the form you want to delete. When users click on the trash can icon, they will be prompted with a pop-up window to confirm the deletion of information and any attachments in the form. Users must click on the "OK" button to complete the deletion of the report.

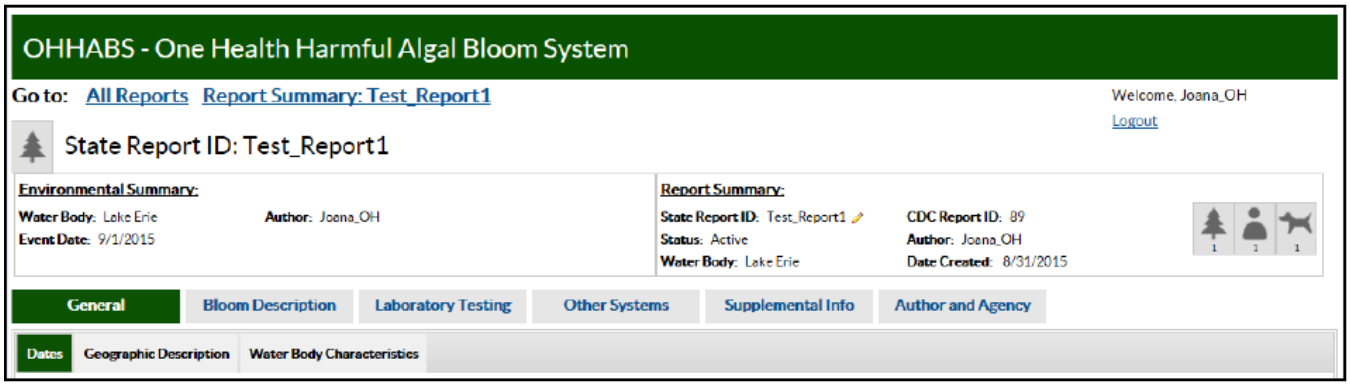


10.3. Edit an OHHABS Form within a Report

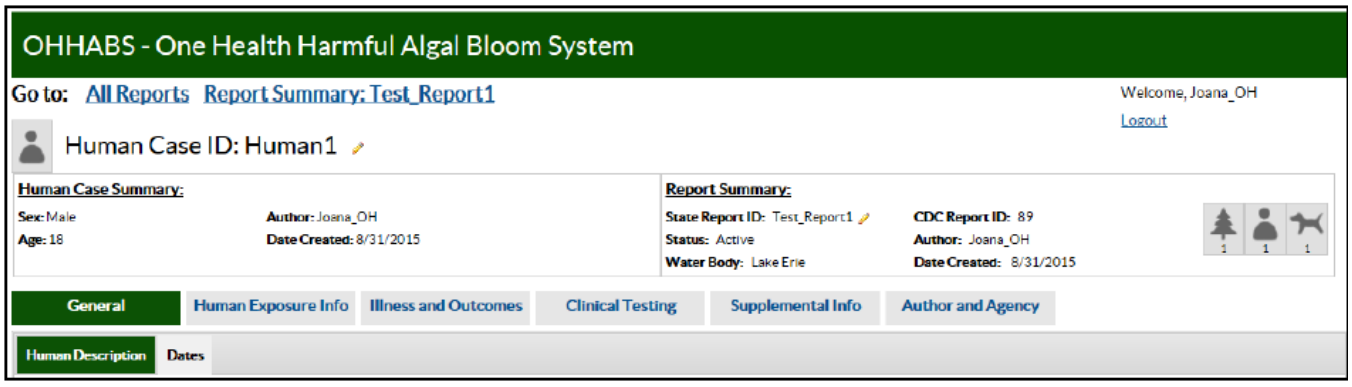
To edit an existing form within an OHHABS report, users can click on the form name link in the View and Edit Report table. Because there is only one Environmental Form within an OHHABS report, the Environmental Form name is referred to by the "State Report ID". Because there can be more than one Human Form or Animal Form within an OHHABS report, these forms are referred to by the "Human Case ID" and "Animal Case ID", respectively.



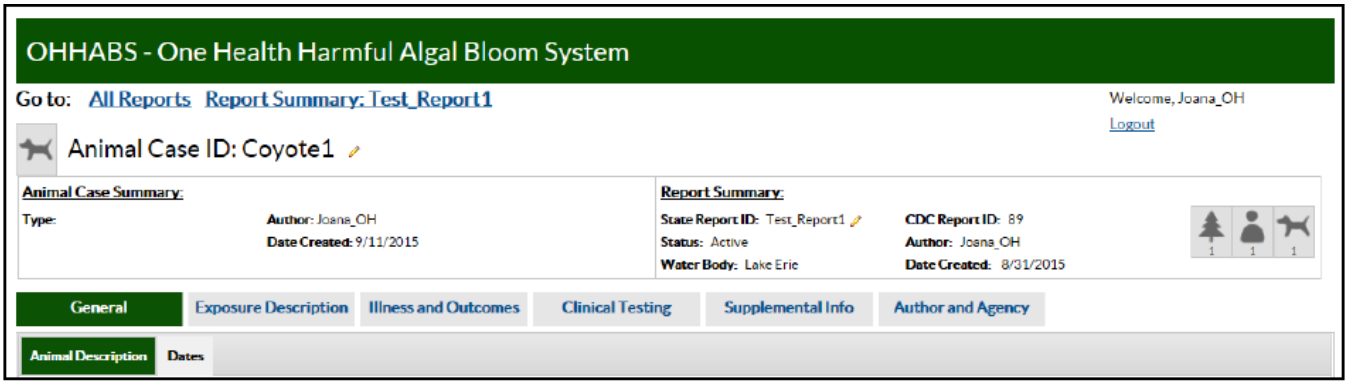
When users click on the “State Report ID” link for the Environmental Form they will be directed to the Environmental Form page. For more information about the Environmental Form, please review the OHHABS Environmental Form Guidance document on the OHHABS website.



When users click on the “Human Case ID” link for the Human Form they will be directed to the Human Form page. For more information about the Human Form, please review the OHHABS Human Form Guidance document on the OHHABS website.



When users click on the “Animal Case ID” link for the Animal Form they will be directed to the Human Form page. For more information about the Animal Form, please review the OHHABS Environmental Form Guidance document on the OHHABS website.



10.4. Edit the Name of an OHHABS Report or Form

Within the Environmental, Human, and Animal Forms, users can edit the existing name of the Form by clicking on the pencil icon in the Form.

- For the Environmental Form, when a user clicks on the pencil icon in the Report Summary Box, a pop-up window will appear and allow the user to edit the name of the report and designate a new "State Report ID" for the existing OHHABS report. Because there is only one Environmental Form within an OHHABS report, the Environmental Form is referred to by the "State Report ID". The "State Report ID" must be a unique (alpha-numeric) name with a 50 character maximum and can only be used once within a state or territory. When a new "State Report ID" has been created, click the "OK" button to save the changes.

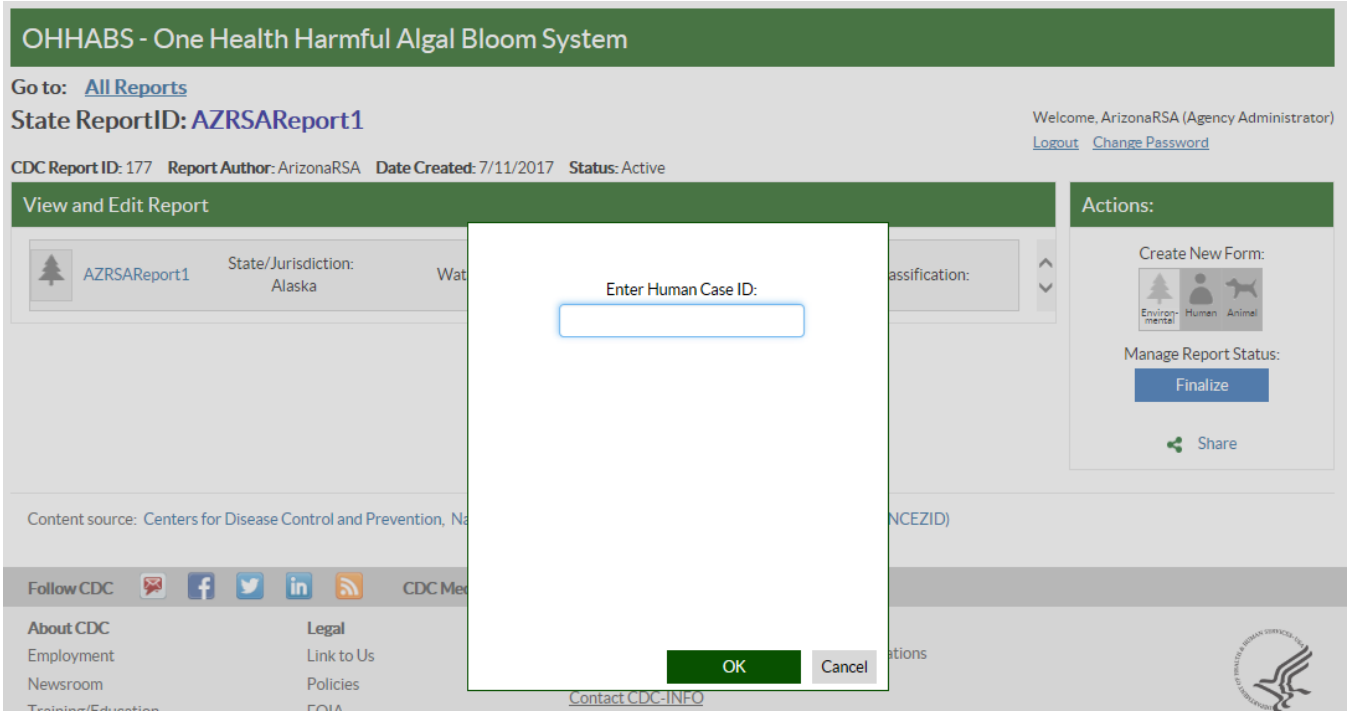
- For the Human Form, when users click on the pencil icon next to the "Human Case ID", a pop-up window will appear and allow the user to edit the "Human Case ID" for the Human Form. The "Human Case ID" must be a unique (alpha-numeric) name with a 50 character maximum and can only be used once in the OHHABS report. When a new "Human Case ID" has been created, click the "OK" button to save the changes.

- For the Animal Form, when users click ion the pencil icon next to the “Animal Case ID”, a pop-up window will appear and allow the user to edit the “Animal Case ID” for the Animal Form. The “Animal Case ID” must be a unique (alpha-numeric) name with a 50 character maximum and can only be used once in the OHHABS report. When a new “Animal Case ID” has been created, click the “OK” button to save the changes.

10.5. Add a New Form to an OHHABS Report

To add a new form to an OHHABS report, users can create a new form in the Actions Box of the View and Edit Report page. Only one Environmental Form can be present within a report and this form is created when the report is initiated; therefore, users can only add new Animal Form or Human Case Form within existing reports.

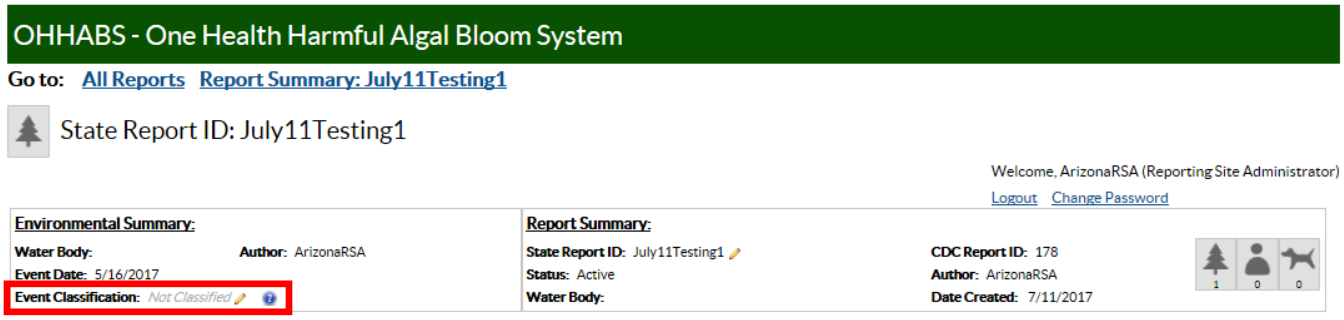
When the user, clicks on the Human or Animal Form Icons in the Actions box, a pop-up window will appear. The pop-up window will prompt the user to “Enter a Human Case ID” or “Enter an Animal Case ID”.



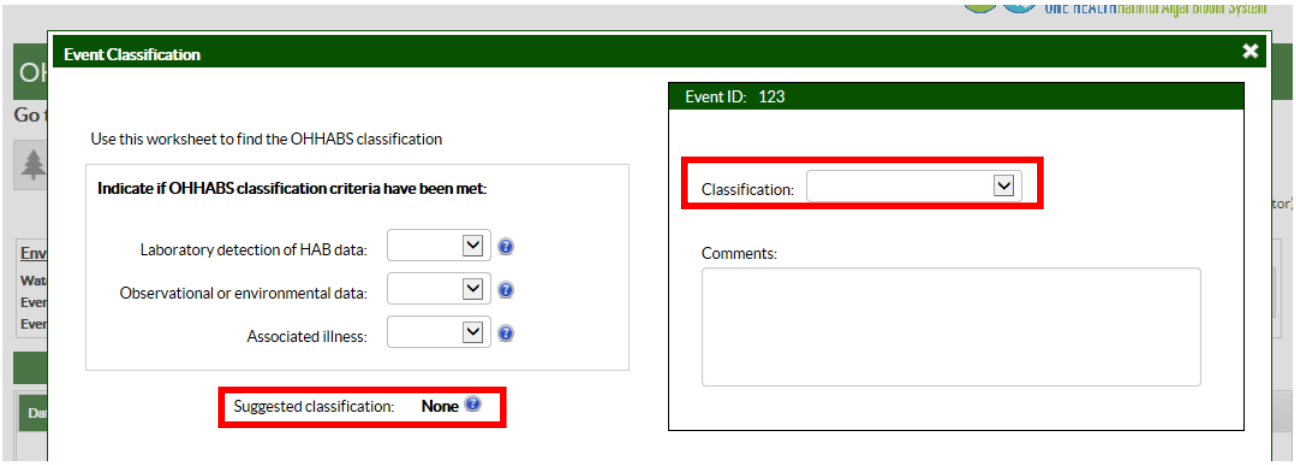
The “Human Case ID” and “Animal Case ID” must be a unique (alpha-numeric) identifiers with a maximum of 50 characters. The “Human Case ID” and the “Animal Case ID” cannot be the same as the State Report ID. The “Human Case ID” and the “Animal Case ID” must be unique within a report as it differentiates individual human and animal cases within a report. For example in a report, if a “Human Case ID” is named Case1, no other Human Form or Animal Forms in the report can be named Case1.

11. Classifying a case or event

Users can classify a case or an event within an OHHABS report in the case or event summary of each form in the report by clicking the pencil mark next to “Case Classification” field.

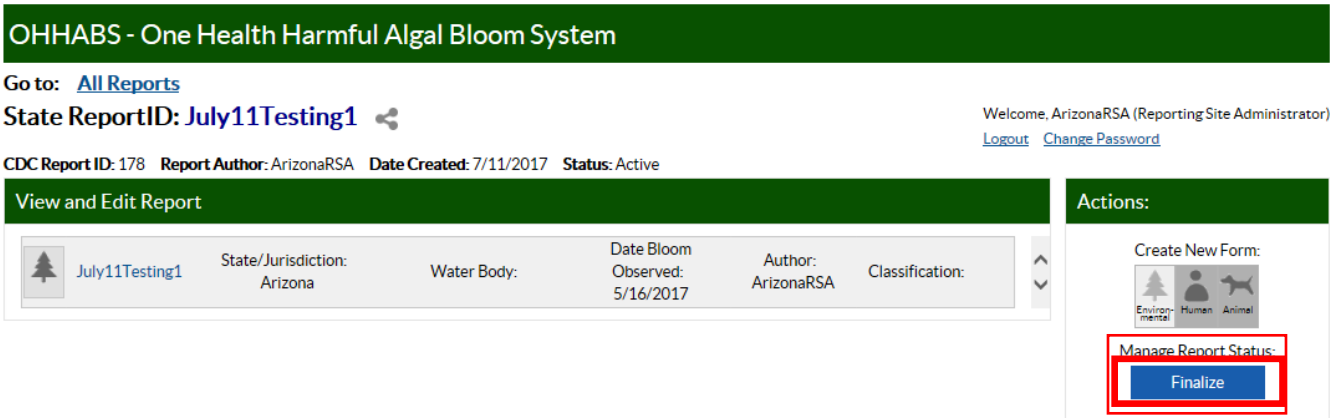


Once clicked, users can fill out the OHHABS classification criteria fields to receive a suggested classification for the case or event, based on the information submitted. Users can choose to use the suggested classification or select their own classification and may choose to provide a comment, if needed. Environmental events have classification as either ‘Suspect’ or ‘Confirmed’ and Human and Animal cases have classification as ‘Suspect’, ‘Probable’ or ‘Confirmed’. For more information about the classification criteria, please see the event and case definitions on the OHHABS training page.

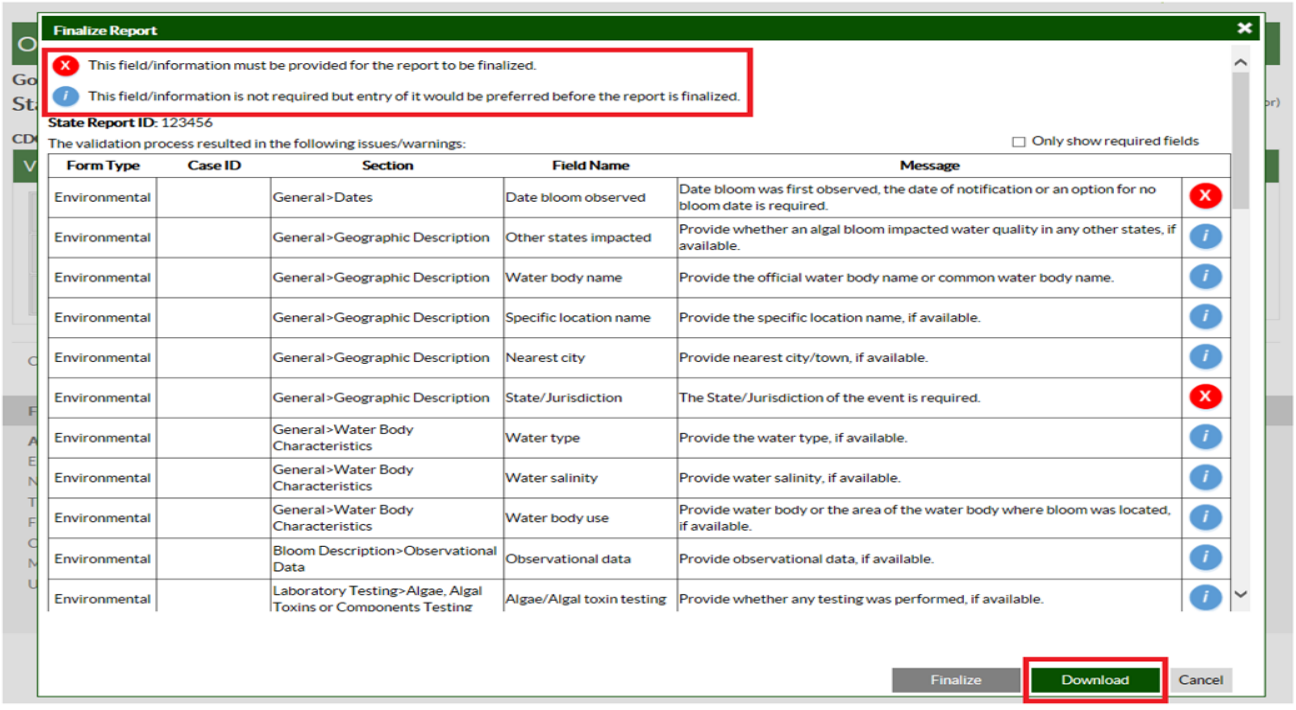


12. Finalizing a report

Administrative users can finalize a report in the 'Manage Report Status' section within the Actions box of the report summary page. A report can be finalized only when all of the required fields within each form in the report are filled in.

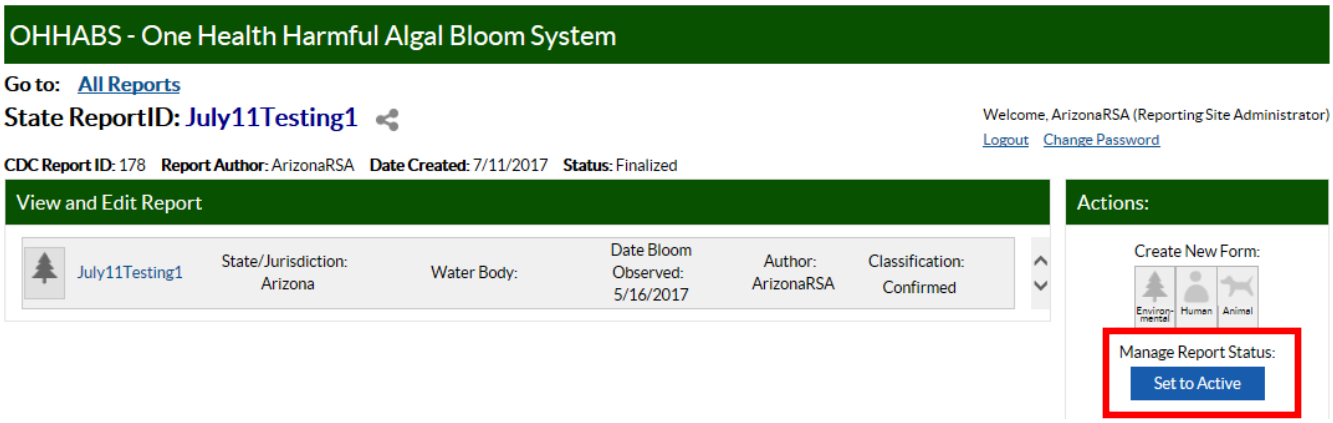


Once users select a report and click the 'Finalize' button, a list of missing fields flagged as either 'required' (indicated by a red circle with an X) or 'preferred' (indicated by a blue circle with an I) will appear. Fields flagged as required' need to be updated by exiting the finalization process, returning to each form with that missing field and completing those fields. Once all fields flagged as 'required' in each form of a report are completed, the user can return to the finalization process to complete finalizing a report. Fields flagged as 'preferred' are included during the finalization process because CDC anticipates the inclusion of these fields in routine reviews of OHHABS data. Users can download the list of missing fields flagged as "required' or 'preferred' and save it for later use.



Form Type	Case ID	Section	Field Name	Message
Environmental		General>Dates	Date bloom observed	Date bloom was first observed, the date of notification or an option for no bloom date is required.
Environmental		General>Geographic Description	Other states impacted	Provide whether an algal bloom impacted water quality in any other states, if available.
Environmental		General>Geographic Description	Water body name	Provide the official water body name or common water body name.
Environmental		General>Geographic Description	Specific location name	Provide the specific location name, if available.
Environmental		General>Geographic Description	Nearest city	Provide nearest city/town, if available.
Environmental		General>Geographic Description	State/Jurisdiction	The State/Jurisdiction of the event is required.
Environmental		General>Water Body Characteristics	Water type	Provide the water type, if available.
Environmental		General>Water Body Characteristics	Water salinity	Provide water salinity, if available.
Environmental		General>Water Body Characteristics	Water body use	Provide water body or the area of the water body where bloom was located, if available.
Environmental		Bloom Description>Observational Data	Observational data	Provide observational data, if available.
Environmental		Laboratory Testing>Algae, Algal Toxins or Components Testing	Algae/Algal toxin testing	Provide whether any testing was performed, if available.

Once the report is finalized, it cannot be edited unless its status is reset to 'Active' by clicking the 'Set to Active' button in the 'Manage Report Status' section. Finalized reports that are set to 'Active' will need to be re-finalized after information has been added/edited.



13. Sharing a Report

Users can share a report from one state to another state for multi-state events in order for impacted states to utilize the report data. There are no expiration dates to how long reports are shared and users can un-share a report at any given point. Users on both end will have a clear way of identifying which reports have been shared. Only users that have administrative right for the authoring agency of a report can configure sharing for that report. Users that have permission can share a report from the report level itself:

Once users choose agencies to share their reports with and set editing permissions, they will be able to see that the report is a shared report and also be able to see the details of who the report is being shared with.