



## DRM Website and Data Entry System

- This training will introduce the DRM website and online data entry system developed by FWRI.  
(<http://ocean.floridamarine.org/FRRP/>)
- The website houses all DRM related content such as data entry, data product download, training materials, uploading DRM images, and Quick Look Reports.
- This training will also cover how to properly **Quality Assure** your data prior to marking it as “Complete” within the data entry system.
- The DRM website and data entry system function best using the Google Chrome internet browser.



# DRM Website Home Page



Florida Fish and Wildlife  
Conservation Commission

Ask FWC MyFWC.com

[Home](#) [Surveyor Trainings and Resources](#) [Reports](#) [Survey Sites](#)

Hello [jennifer.stein@myfwc.com](mailto:jennifer.stein@myfwc.com)! [Log off](#)



Surveyors can enter their DRM data by clicking the log-in link in the top right corner and creating an account. If surveyors have questions about registering or their log-in information, please contact [Jennifer Stein](#).

NOAA CRCP Acknowledgements

## Disturbance Response Monitoring “DRM”

The Florida Reef Resilience Program (FRRP) is a collaborative effort among local, state and federal environmental managers, scientists, conservation organizations and reef users to develop resilience-based management strategies for anticipating and addressing climate change and other stressors on Florida’s coral reefs. To learn more about FRRP, please visit [FRRP.org](http://FRRP.org).

Coral bleaching is projected to increase in response to climate change-induced warming of ocean temperatures, and the FRRP Disturbance Response Monitoring program (DRM) was developed for monitoring shallow coral reefs from the Dry Tortugas to Martin County to facilitate adaptive management in a changing environment. The DRM consists of a probabilistic sampling design and a condition monitoring protocol for stony corals implemented during the annual period of peak thermal stress. Each year, survey teams from federal, state, and local government agencies, universities and non-governmental organizations cooperate to complete surveys across the entire south Florida Reef Tract within an eight to ten-week period.

Here is a list of our DRM survey partners: The Nature Conservancy, Mote Marine Laboratory, University of Miami, Nova Southeastern University, Miami-Dade County, Broward County, Florida Fish and Wildlife Conservation Commission, Florida Department of Environmental Protection, National Oceanic and Atmospheric Administration, National Park Service, and Keys Marine Lab.

<https://ocean.floridamarine.org/FRRP/>

Click on the below links to access the ‘Disturbance Response Monitoring’ surveyor training modules, resources and Quick Look Reports.

## Training Modules

- LESSON 1 - Introduction to FRRP and DRM
- LESSON 2 - DRM Sampling Design
- LESSON 3 - DRM In-Water Methodology
- LESSON 4 - Coral Demographic Training
- LESSON 5 - Coral Condition Training
- LESSON 6 - DRM Website and Data Entry Training
- LESSON 7 - Coral Species Review
- LESSON 8 - Juvenile Coral ID Training
- LESSON 9 - Coral ID & Condition Practice
- LESSON 10 - Diadema antillarum Training

**All training modules and resources on this page will be updated for the 2024 season on July 1<sup>st</sup>.**

A link to a zipped folder containing an excel file, shapefile, google earth file, and subregion-maps of assigned DRM sites will be added to the Resources on July 24<sup>th</sup>. The link will be named “2024 DRM Survey Sites”.

## Resources

- FWC Photo Release Form
- DRM Google Drive (to upload DRM images)
- Florida Reef Tract Coral Bleaching Response Plan
- DRM In-Water Protocol
- DRM Transect Datasheet
- DRM In-Water Consistency Training
- DRM Data Entry Protocol
- Percent Coral Mortality Visual Aid
- Subregion-Zones Surveyed by Year
- DRM Juvenile Guide
- AGRRA Response Network – Diadema and Unomia Information

The *DRM 2024 Images* Google Drive folder can be accessed from the link on this page. Please fill out the photo release form and upload it along with your images.

A link to a *Juvenile Coral Guide* or “Cheat Sheet” that you can print on underwater paper and bring underwater with you during your surveys is available for download under the Resources heading.

## Quick Look Reports - Survey summaries and results

- 2011 Summer DRM Quick Look Report
- 2012 Summer DRM Quick Look Report
- 2013 Summer DRM Quick Look Report
- 2014 Summer DRM Quick Look Report
- 2015 Winter DRM Quick Look Report





From the 'Report' page you can filter and download all historic DRM data.



## Raw Corals Data

DRM Database Metadata 2005-2023

- Select Batch - - Select Subregion - - Select Zone - Apply

First, select what spatial filters you want to apply. If none are selected, all areas will be included in the exported data file (.csv).

Export

Click to View All Corals Data (2005-present)

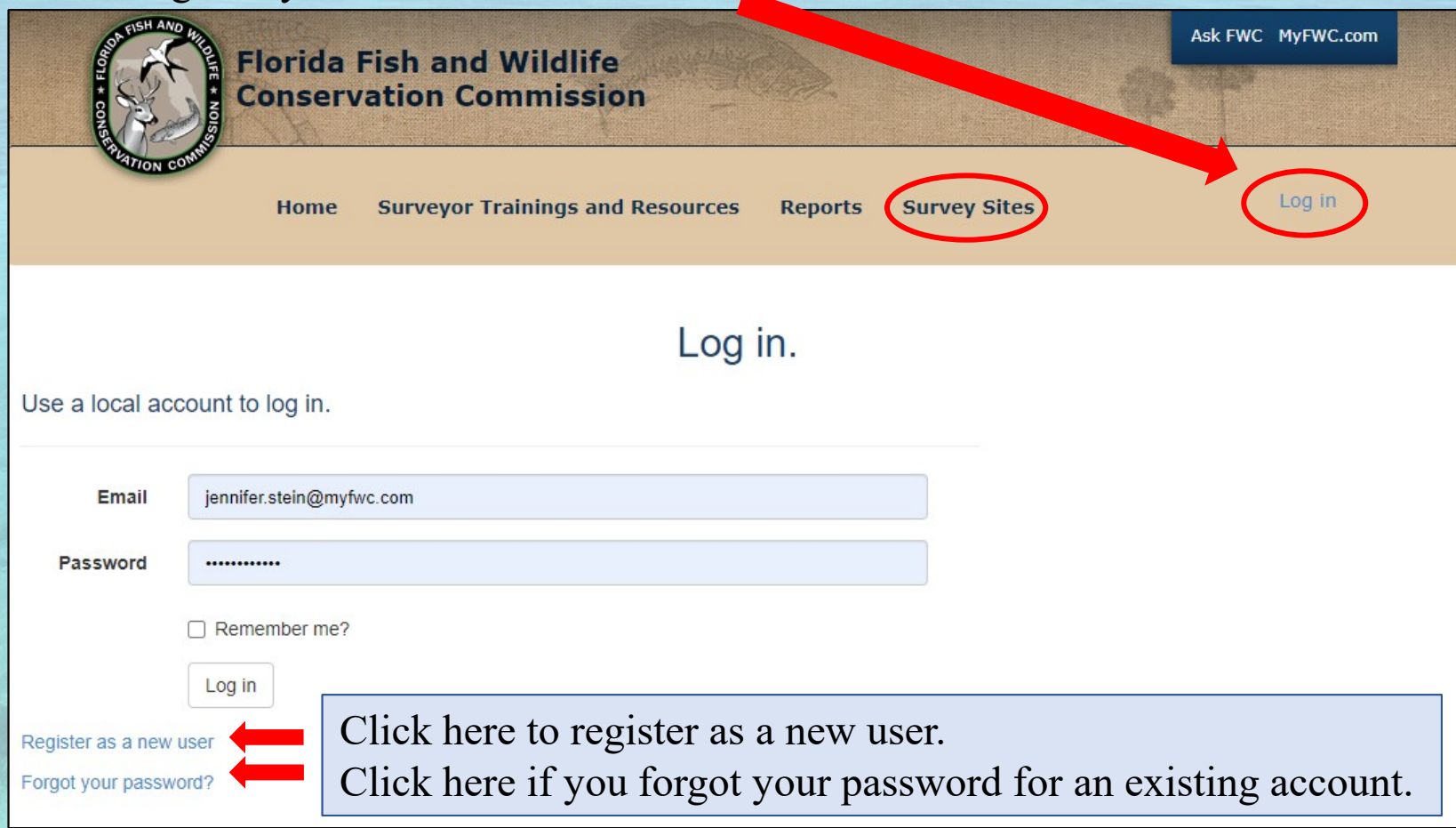
You can also click the grey bar to expand a view of your data before you press the 'Export' button.

Last, click the 'Export' button to download the .csv of your requested data. And don't forget to download the **DRM metadata** as well for your reference.

# Register and Log-In to Enter Data

In order for a surveyor to enter data into the DRM online data portal, they must first register as a new user or log-in with an existing username and password from the previous year.

By clicking the 'Log in' link at the top right of the menu bar, you can 'Register as a new user' or log into your account.



Florida Fish and Wildlife Conservation Commission

Ask FWC MyFWC.com

Home Surveyor Trainings and Resources Reports **Survey Sites** **Log in**

Log in.

Use a local account to log in.

Email jennifer.stein@myfwc.com

Password .....

Remember me?

Log in

Register as a new user

Forgot your password?

Click here to register as a new user.

Click here if you forgot your password for an existing account.

To register as a new user for the first time, enter in all the below fields.

Next, select your **'User Role'** (Surveyor or Team Leader)

Lastly, select your **'Team'**. You can identify with more than one team if needed.

Florida Fish and Wildlife Conservation Commission

Home Surveyor Trainings and Resources

Register

Create a new account.

First Name

Last Name

Email

Password

Confirm password

User Role

Team   
Biscayne National Park  
NCRI-NSUOC  
RSMAS

Register

If diving on multiple teams, select all teams here.

## 2024 Teams

Martin County  
Palm Beach Zoo  
Palm Bch. Co. ERM  
DEP – WPB  
Broward County  
NOVA SE Univ.  
DEP – Miami  
DERM – Miami  
RSMAS  
Biscayne NP  
Pennekamp  
I CARE  
Sanctuary  
• Upper Keys  
• Lower Keys  
FWRI Rest. Ecol.  
FWRI Coral  
Keys Marine Lab  
MOTE  
Shedd Aquarium  
Marquesas  
Dry Tortugas NP



Once you are signed in, you will be directed to the 'Survey Sites' page.

Add New Strategic Site

DRM Sites

Assigned sites for your team(s), are displayed in the site list below or can be viewed by zooming into your region on the map.

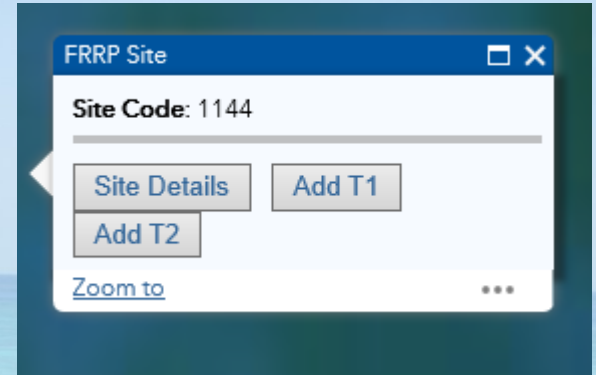
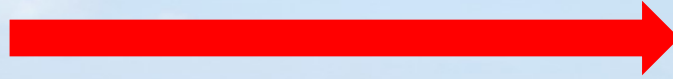
Click on the point icon for your site within the map or in the map legend on the left.

If you are assigned to more than one team, you can filter sites here.

Choose Team  Filter by Team

Site Code	Team	Transect 1	Transect 2	Transect 3	Transect 4	Corals	Unsuitable Habitat?	Completed?
1000	FWRI Coral Team - Upper Keys	T1	T2	T3	T4	0	<input type="checkbox"/>	<input type="checkbox"/>
1001	FWRI Coral Team - Upper Keys	T1	T2	T3	T4	0	<input type="checkbox"/>	<input type="checkbox"/>
1002	FWRI Coral Team - Upper Keys	T1	T2	T3	T4	0	<input type="checkbox"/>	<input type="checkbox"/>

When you click on your site icon on the map, a pop-up box will appear. Here you can access the data entry page for each transect or access the Site Details page.



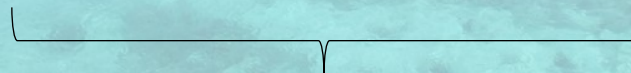
Or, you can simply click on the transect links provided in the list of sites below the map.



Site Code	Team	Transect 1	Transect 2	Transect 3	Transect 4	Corals	Unsuitable Habitat?	Completed?
<a href="#">1000</a>	FWRI Coral Team - Upper Keys	<a href="#">T1</a>	<a href="#">T2</a>	<a href="#">T3</a>	<a href="#">T4</a>	0	<input type="checkbox"/>	<input type="checkbox"/>
<a href="#">1001</a>	FWRI Coral Team - Upper Keys	<a href="#">T1</a>	<a href="#">T2</a>	<a href="#">T3</a>	<a href="#">T4</a>	0	<input type="checkbox"/>	<input type="checkbox"/>
<a href="#">1002</a>	FWRI Coral Team - Upper Keys	<a href="#">T1</a>	<a href="#">T2</a>	<a href="#">T3</a>	<a href="#">T4</a>	0	<input type="checkbox"/>	<input type="checkbox"/>



This link takes you to the 'Site Details' page where you can view your current entries.



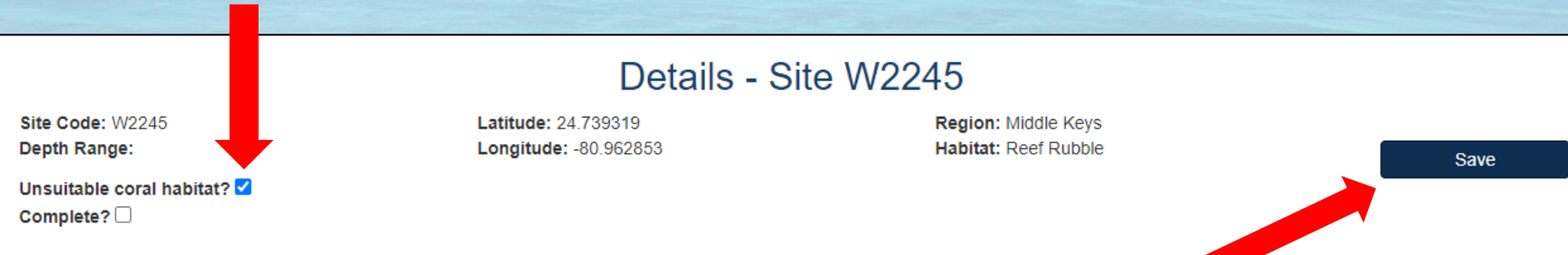
These links take you to the 'Transect Details' page for data entry.



# Unsuitable Coral Habitat?

If you visited a site and did not find suitable coral habitat, be sure to record it in the online data entry system.

First, click the appropriate site in your List of Sites to access the 'Site Details' page. Then, click the '**Unsuitable coral habitat**' check box under the site details heading on the left side of the screen.



Details - Site W2245

Site Code: W2245  
Depth Range:

Latitude: 24.739319  
Longitude: -80.962853

Region: Middle Keys  
Habitat: Reef Rubble

Unsuitable coral habitat?   
Complete?

Save

Once you have clicked the 'Unsuitable coral habitat' button click '**Save**', and the site will appear as **\*\*\*DRM\_ID\*\*\*** in your list of sites.



Identifying sites that are not coral habitat helps to refine the grid file strata for better accuracy in future surveys.

Typically, unsuitable habitat is identified when a site falls on **Sand** or **Seagrass** habitats.

# Data Entry Page

From the 'Survey Sites' page, click on 'T1', 'T2', 'T3', or 'T4', to be directed to the below data entry page.

Site Code	Team	Transect 1	Transect 2	Transect 3	Transect 4
W1204	FWRI Coral	T1	T2	T3	T4

Within the data entry page for **Transect 1** and **2**, there will be **five** section headings as seen below. Each section can be expanded and collapsed using the [+] or [-] signs. The first two sections are automatically expanded when you access the page to make sure you remember to fill them out first.

### Add New Transect - Site W1204

Site W1204 Details [-] **1**

Latitude 25.290099    
Longitude -80.175032   
Habitat Contiguous Reef Other

Transect 1 Details [-] **2**

Date    
Depth  (ft)   
H.Diad  Yes  No  
D.Diad  Yes  No  
APAL  Yes  No  
ACER  Yes  No  
DCYL  Yes  No  
Shared?   
Buddy   
No corals found   
Comments

Rugosity Measurements (cm) [+] **3**

Juvenile Coral Tallies [+] **4**

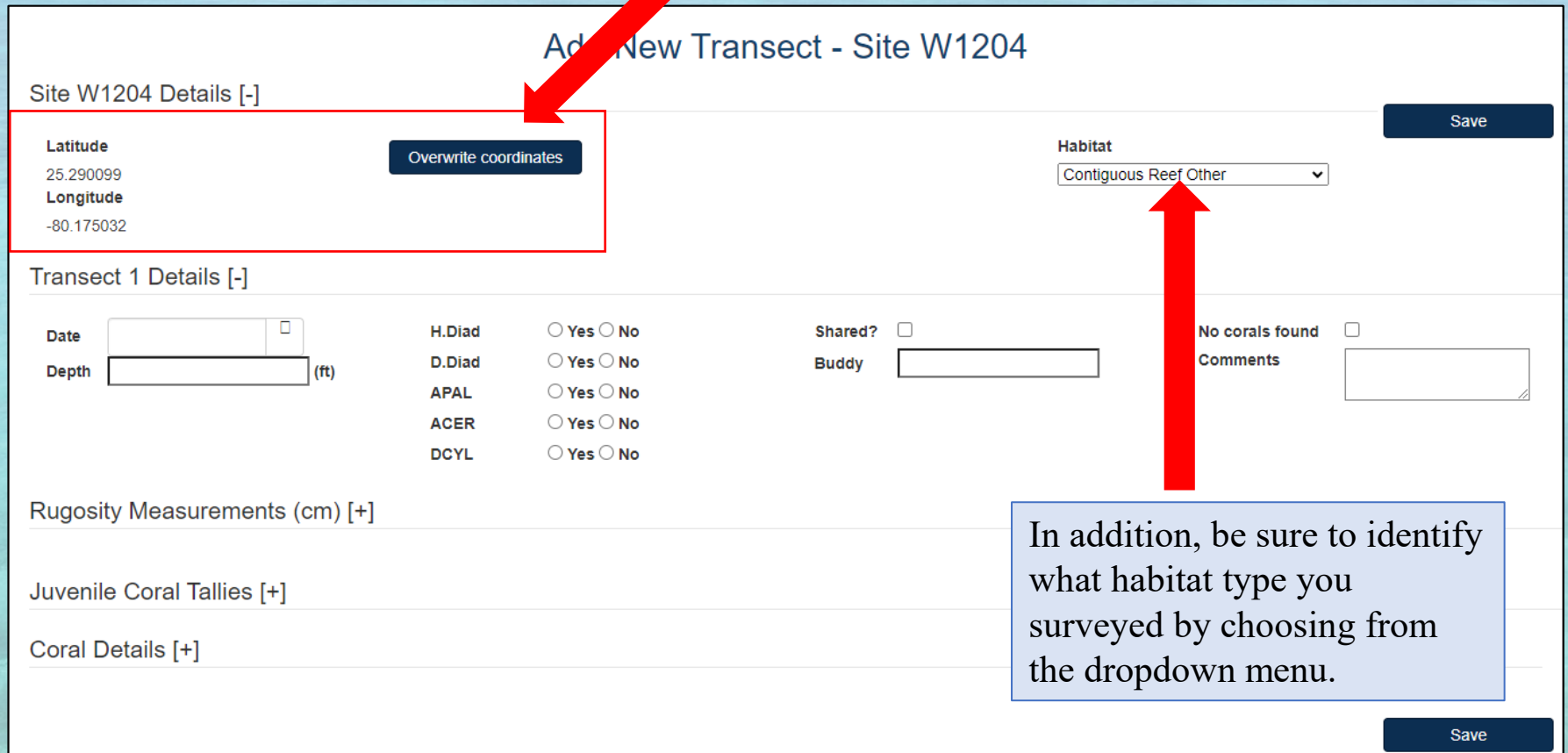
Coral Details [+] **5**

# Entering Site Data

If your original site coordinates for an assigned site **did** fall on suitable coral habitat, the Latitude and Longitude will remain the same.

However, if you moved the location of your site, you will need to enter in new coordinates.

You can enter new coordinates by clicking the ‘**Overwrite coordinates**’ button.



The screenshot shows a web form titled "Add New Transect - Site W1204". The form is divided into several sections:

- Site W1204 Details [-]**: This section contains fields for "Latitude" (25.290099) and "Longitude" (-80.175032). A red box highlights these fields, and a red arrow points to a dark blue button labeled "Overwrite coordinates".
- Habitat**: A dropdown menu is set to "Contiguous Reef Other". A red arrow points to this dropdown.
- Transect 1 Details [-]**: This section includes fields for "Date" (with a calendar icon), "Depth" (with a unit "(ft)"), and several coral species tallies: "H.Diad", "D.Diad", "APAL", "ACER", and "DCYL", each with "Yes" and "No" radio buttons. There are also checkboxes for "Shared?" and "No corals found", and a text input field for "Buddy".
- Comments**: A text input field for "Comments".
- Rugosity Measurements (cm) [+]**: A section for entering rugosity data.
- Juvenile Coral Tallies [+]**: A section for entering juvenile coral tallies.
- Coral Details [+]**: A section for entering coral details.

At the bottom right of the form, there is a dark blue "Save" button. A blue callout box with a white background and a blue border is positioned in the lower right, containing the text: "In addition, be sure to identify what habitat type you surveyed by choosing from the dropdown menu."



If you click the 'Overwrite coordinates' button a pop-up screen will appear for you to enter your new Lat/Long.

Site 1000 Details [-]

<b>Latitude</b>	25.799468
<b>Longitude</b>	-80.095595

[Overwrite coordinates](#)



Enter new coordinates

Latitude

Longitude

[Verify](#)

After you enter your new coordinates click the 'Verify' button. If the coordinates you entered are  $> 25\text{m}$  from the original site location, the online system will prompt you to enter your data under a 'New Strategic Site'.

To enter a 'New Strategic Site' return to the 'Survey Sites' page where all of your sites are listed. At the top left of the map is the 'Add New Strategic Site' button. This button will direct you to a page where you can create a new strategic site.

Home   Surveyor Trainings and Resources   Reports   **Survey Sites**

Hello jennifer.stein@myfwc.com!   Log off

**Add New Strategic Site**

DRM Sites

DRM Site Selection Map

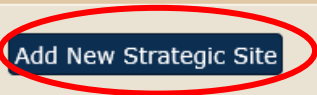
Home   Search

# Add New Strategic Site

[Home](#) [Surveyor Trainings and Resources](#) [Reports](#) [Survey Sites](#)

Once you click on the ‘Add New Strategic Site’ button, you will be directed to a new screen.

Hello jennifer.stein@myfwc.com! [Log off](#)

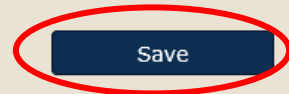


## DRM Sites



### Add New Strategic Site

Latitude  Region  Comments   
Longitude  Team



Here you will enter your new site information.

Once you click the ‘Save’ button, your new strategic site will appear in your list of surveys sites. Strategic sites will be assigned numbers in the **3000**’s as new sites are entered by the teams. All of your strategic sites will be listed below your assigned sites. **Write this new number on your datasheet!**



Site Code
1000
1001
1002
3000

# Entering Transect Data

Below the 'Site Details' heading is where you will enter your transect information.

If after surveying a transect and no corals (adult or juvenile) were observed, it must be identified in the data entry system by clicking the '**No corals found**' button and then clicking the '**Save**' button. Date and Depth must be filled out prior to pressing save.

The 'No corals found' button will most commonly be used for Transects 3 and 4 that are limited to the 10 target adult coral species and the target juvenile colonies.

## Add New Transect - Site W1204

Site W1204 Details [-]

Latitude 25.290099	<input type="button" value="Overwrite coordinates"/>	Habitat Contiguous Reef Other	<input type="button" value="Save"/>
Longitude -80.175032			

Transect 1 Details [-]

Date <input type="text"/>	H.Diad <input type="radio"/> Yes <input type="radio"/> No	Shared? <input type="checkbox"/>	No corals found <input type="checkbox"/>
Depth <input type="text"/> (ft)	D.Diad <input type="radio"/> Yes <input type="radio"/> No	Buddy <input type="text"/>	Comments <input type="text"/>
	APAL <input type="radio"/> Yes <input type="radio"/> No		
	ACER <input type="radio"/> Yes <input type="radio"/> No		
	DCYL <input type="radio"/> Yes <input type="radio"/> No		

Rugosity Measurements (cm) [+]

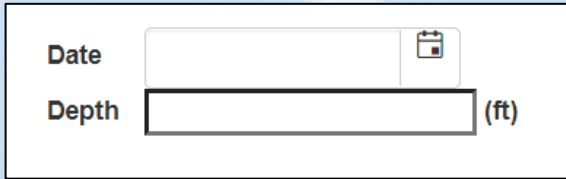
Juvenile Coral Tallies [+]


Coral Details [+]

**Don't forget to press 'Save'.**



# Entering Transect Data



Date    
Depth  (ft)

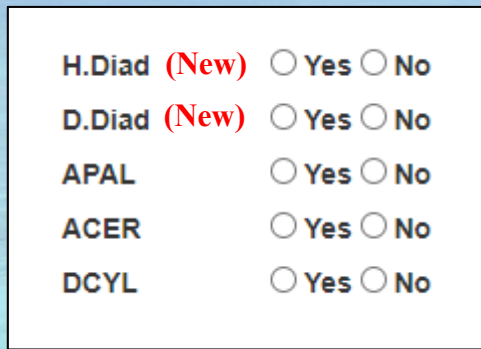
Click on the calendar icon to choose the date of your survey.

Enter the **depth** of your transect in **FEET**.

Click ‘**Yes**’ or ‘**No**’ to identify presence or absence.

Record the presence or absence of Healthy and/or Diseased *Diadema* within your transect or within the visible area surrounding your transect. (New in 2022)

Record *Acropora* sp. or *Dendrogyra* presence in the area surrounding your transect that are not captured within your 10m x 1m belt transect. This data will be subject to underwater visibility and your view of the surrounding substrate.

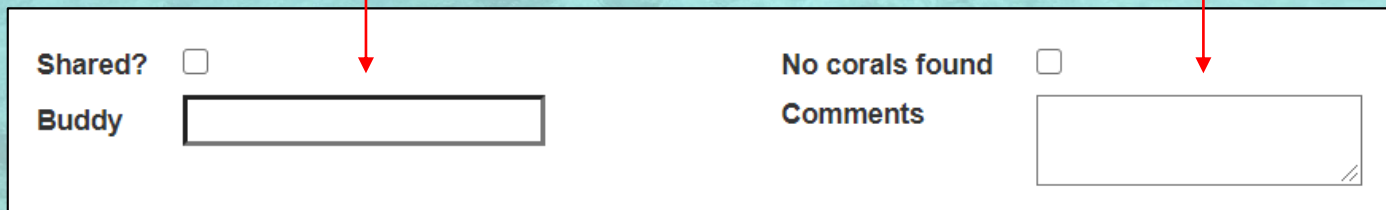




H.Diad (New)  Yes  No  
D.Diad (New)  Yes  No  
APAL  Yes  No  
ACER  Yes  No  
DCYL  Yes  No

(Transect 1 and 2 only)

If another surveyor helped you complete your transect, click the ‘**Shared**’ button. Then, identify who helped you complete your transect (**Buddy**).

Site notes can be entered in the ‘**Comments**’ box but be aware that this information will not be used for any data analysis.



Shared?    
Buddy   
No corals found    
Comments

# Rugosity Data Entry

Next you will enter the 10 rugosity measurements.

**Rugosity is only collected along Transects 1 and 2.** This section is excluded from the Transects 3 and 4 data entry page.

Rugosity measurements must be whole positive numbers. A zero value can be entered if surveying flat substrate. Rugosity measurements should be recorded in **centimeters**.

## Add New Transect - Site W1204

Site W1204 Details [+]

Save

Transect 1 Details [+]

Please enter a value into every box even if it is zero.

Rugosity Measurements (cm) [-]

1.	<input type="text"/>	4.	<input type="text"/>	7.	<input type="text"/>	9.	<input type="text"/>
2.	<input type="text"/>	5.	<input type="text"/>	8.	<input type="text"/>	10.	<input type="text"/>
3.	<input type="text"/>	6.	<input type="text"/>				

Juvenile Coral Tallies [+]

Coral Details [+]

Save

# Juvenile Coral Data Entry

Juvenile coral tallies will be entered into the boxes next to the three target families and species *Montastraea cavernosa*.

**Juvenile corals are tallied along all four Transects.**

Juvenile coral tallies must be whole positive numbers. A zero value can be entered if no juvenile corals were observed. If no data is entered, values will default to zero.

## Add New Transect - Site W1204

Site W1204 Details [+]

Save

Transect 1 Details [+]

Rugosity Measurements (cm) [+]

Juvenile Coral Tallies [-]

Mussinae	<input type="text"/>	(ISOP, MANG, MYCE, SCOL)
Faviinae	<input type="text"/>	(CNAT, DLAB, FAVI, MARE, PSTR, PCLI)
Meandrinidae	<input type="text"/>	(DCYL, DSTO, EFAS, MMEA)
<i>Montastraea cavernosa</i>	<input type="text"/>	(MCAV) <b>(New in 2022)</b>

Coral Details [+]

Save



# Coral Data Entry

At the bottom of the data entry screen is where you will enter your coral demographic and condition data.

In the box provided under ‘**Number of rows**’, enter in the number of corals recorded along your transect so that you have a row for each colony and then press ‘**Add**’. You can use the small numbers on your underwater datasheet in the ‘Species Code’ column to help count the number of corals you recorded.

Transect 1 Details [+]

Rugosity Measurements (cm) [+]

Juvenile Coral Tallies [+]

Coral Details [-]

Number of rows:

Enter in the number of corals or rows here.

Add

Then press ‘Add’.

Hover over the column headers for information about acceptable values.

Row No	Species	Width (cm)	Height (cm)	Bleaching	% Old Mort	% Other Rec Mort	% Disease Rec Mort	TL Rate	Disease Condition	Other Condition	
--------	---------	------------	-------------	-----------	------------	------------------	--------------------	---------	-------------------	-----------------	--

## Coral Details [-]

Number of rows:

Add

Hover over the column headers for information about acceptable values.

Row No	Species	Width (cm)	Height (cm)	Bleaching	% Old Mort	% Other Rec Mort	% Disease Rec Mort	TL Rate	Disease Condition	Other Condition	
Columns will appear here once you press the 'Add' button.											



Enter in the total number of corals you recorded **OR** add rows as you go. Added rows will appear at the bottom of your existing data.

## Coral Details [-]

Number of rows:

15

Add

Hover over the column headers for information about acceptable values.

Row No	Species	Width (cm)	Height (cm)	Bleaching	% Old Mort	% Other Rec Mort	% Disease Rec Mort	TL Rate	Disease Condition	Other Condition	
12					0	0	0				✕ Delete
13					0	0	0				✕ Delete
14					0	0	0				✕ Delete
15	-				0	0	0				✕ Delete

# Coral Data Entry Example

Use the four-letter Species Codes in the ‘**Species**’ column.

To display the species code drop down list, hit the ‘**Space Bar**’ on your keyboard.

Scroll to the correct species and hit ‘**Enter**’ on your keyboard to select.

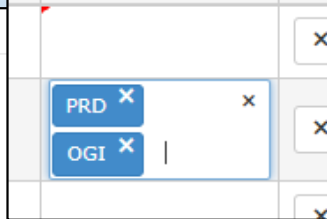
The ‘**Tab**’ key will progress your cursor to the right.

Coral Details [-]

Number of rows:

Hover over the column headers for information about acceptable values.

Row No	Species	Width (cm)	Height (cm)	Bleaching	% Old Mort	% Other Rec Mort	% Disease Rec Mort	TL Rate	Disease Condition	Other Condition	
1	MMEA	15	10	P	10	5	5	FA	STL	PRD	<input type="button" value="X Delete"/>
2	PAST	10	5		20	0	0				<input type="button" value="X Delete"/>
3	SSID	25	7	PB	30	25	0		DSD	OGI	<input type="button" value="X Delete"/>
4	OFAV	65	50		5	2	15	FA	UNK	PRD,OGI	<input type="button" value="X Delete"/>



Use four-letter sp. codes.

W and H fields must be filled out.

Only one code can be entered.

More than one code can be entered.

Only one entry can be entered into the ‘Bleaching’ and ‘TL Rate’ fields.

More than one entry can be entered into both the ‘Disease Conditions’ and ‘Other Conditions’ columns.

Mortality fields will default to zero if no data is entered.



# Coral Data Entry Example

Mortality estimates must not total to more than 100%.

$\% \text{ Old Mortality} + \% \text{ Other Recent Mortality} + \% \text{ Disease Recent Mortality}$

Coral Details [-]

Number of rows:

Hover over the column headers for information about acceptable values.

Row No	Species	Width (cm)	Height (cm)	Bleaching	% Old Mort	% Other Rec Mort	% Disease Rec Mort	TL Rate	Disease Condition	Other Condition	
1	MMEA	15	10	P	10	5	5	FA	STL	PRD	<input type="button" value="x Delete"/>
2	PAST	10	5		20	0	0				<input type="button" value="x Delete"/>
3	SSID	25	7	PB	30	25	0		DSD	OGI	<input type="button" value="x Delete"/>
4	OFAV	65	50		5	2	15	FA	UNK	PRD,OGI	<input type="button" value="x Delete"/>
											<input type="button" value="x Delete"/>



Cannot total > 100%

The ‘% Old Mortality’ field will not let you enter in a value > 99%.

**If a coral has 100% Old Mortality, then it is not recorded along your transect.**

# Coral Data Entry Example

Discoloration (**DC**) and Dark Spot Disease (**DSD**) can be entered in the Disease Conditions column without any ‘% Disease Recent Mortality’ estimate. Similarly, Mucus Sheathing (**MUC**) and *Cliona delitrix* (**CLN**) can be entered in the Other Conditions column without any ‘% Other Recent Mortality’ estimate.

If ‘% Disease Recent Mortality’ is greater than zero however, a disease condition that results in tissue loss must be entered. DC or DSD cannot be entered as a cause for tissue loss.

## Coral Details [-]

Number of rows:

Hover over the column headers for information about acceptable values.

Row No	Species	Width (cm)	Height (cm)	Bleaching	% Old Mort	% Other Rec Mort	% Disease Rec Mort	TL Rate	Disease Condition	Other Condition	
1	MMEA	15	10	P	10	5	5	FA	STL	PRD	<input type="button" value="x Delete"/>
2	PAST	10	5		20	0	0				<input type="button" value="x Delete"/>
3	SSID	25	7	PB	30	25	0		DSD	OGI	<input type="button" value="x Delete"/>
4	OFAV	65	50		5	2	15	FA	UNK	PRD,OGI	<input type="button" value="x Delete"/>
											<input type="button" value="x Delete"/>

Disease conditions Rapid Tissue Loss (RTL), White Band Disease (WBD), and White Pox Disease (WPX) occur only on Acroporid corals. You can only enter RTL, WBD, and/or WPX in the ‘Disease Conditions’ column if an Acroporid is entered into the ‘Species’ column. *Acropora cervicornis* (ACER), *A. palmata* (APAL), *A. prolifera* (APRO).

# Coral Data Entry Example

Coral Details [-]

Number of rows:

Hover over the column headers for information about acceptable values.

Row No	Species	Width (cm)	Height (cm)	Bleaching	% Old Mort	% Other Rec Mort	% Disease Rec Mort	TL Rate	Disease Condition	Other Condition	
1	MMEA	15	10	P	10	5	5	FA	STL	PRD	<b>✕ Delete</b>
2	PAST	10	5		20	0	0				✕ Delete
3	SSID	25	7	PB	30	25	0		DSD	OGI	✕ Delete
4	OFAV	65	50		5	2	15	FA	UNK	PRD,OGI	✕ Delete

The **'Delete'** button at the end of each coral entry row will remove the entire row from your screen.

Be aware that there is no way to undo your deleted data.

**Be sure to 'Save' your data before you navigate away from the data entry page. You can always come back and edit your data at a later time.**

When you press 'Save' the data entry system prompts you that save was successful.



# Transects 3 and 4

## Data Entry for Transects 3 and 4 includes:

1. Transect Details – Date and Depth (use depth from either T1 or T2).
  - \*\*\*Be sure to mark the ‘No corals found’ button if no adult or juvenile corals are observed\*\*\*.
2. Juvenile Coral Tallies – Tally all juveniles observed within the three target families or *Montastrea cavernosa* juvenile colonies the same as done on T1 and T2.
3. Coral Details – Coral species are limited to 10 target species.

Add New Transect - Site V1000

Transect 3 Details [-] **1**

Date   Shared?  **No corals found**  Save

Depth  (ft) Buddy  Comments

Juvenile Coral Tallies [-] **2**

Mussinae  (ISOP, MANG, MYCE, SCOL)  
Faviinae  (CNAT, DLAB, FAVI, MARE, PSTR, PCLI)  
Meandrinidae  (DCYL, DSTO, EFAS, MMEA)  
Montastrea cavernosa  (MCAV)

Coral Details [-] **3**

Number of rows:

Add

Hover over the column headers for information about acceptable values.

Row No	Species	Width (cm)	Height (cm)	Bleaching	% Old Mort	% Other Rec Mort	% Disease Rec Mort	TL Rate	Disease Condition	Other Condition

Adult coral target species codes:  
CNAT, DSTO, DLAB, MMEA, MANG, MALI, MFER,  
MLAM, PCLI, and PSTR

Once you start your data entry for a transect and press ‘**Save**’, the link to that transect in the list of sites will disappear and the total number of corals that have been entered for the site will start to add up in the ‘Corals’ column.

Site Code	Team	Transect 1	Transect 2	Transect 3	Transect 4	Corals	Unsuitable Habitat?	Completed?
1000	FWRI Coral Team - Upper Keys	T1		T3	T4	20	<input type="checkbox"/>	<input type="checkbox"/>
1001	FWRI Coral Team - Upper Keys	T1	T2		T4	80	<input type="checkbox"/>	<input type="checkbox"/>
1002	FWRI Coral Team - Upper Keys	T1	T2	T3	T4	0	<input type="checkbox"/>	<input type="checkbox"/>

[Site Details Page](#)

To continue entering data for that transect or if you would like to make edits to the data you have already entered for a transect, you will use the ‘**Edit**’ feature in the Site Details page.

# Editing Transect Data

If you cannot finish your data entry and need to return to it at a later time or if you need to edit your existing data, you can access your saved data by clicking the corresponding Site Code from your list of survey sites. This will take you to the Site Details page which is a read-only view of the data as seen here.

### Details - Site 1000

Site Code: 1000  
Depth Range:  
Unsuitable coral habitat?   
Complete?

Latitude: 25.799468  
Longitude: -80.095595

Region:  
Habitat: Contiguous Reef Other

[Save](#)

### Transect Details

Transect	Surveyor	Depth	Date	H.Diad.	D.Diad.	APAL	ACER	DCYL	No Corals?	Comments		
1	JEST	15.00	7/6/2020	Y	N	N	N	N	<input type="checkbox"/>		<a href="#">Edit</a>	<a href="#">Delete</a>
2	JEST	12.00	7/6/2020	N	N	N	N	N	<input type="checkbox"/>		<a href="#">Edit</a>	<a href="#">Delete</a>
3	JEST	12.00	7/6/2020						<input checked="" type="checkbox"/>		<a href="#">Edit</a>	<a href="#">Delete</a>
4	JEST	12.00	7/6/2020						<input type="checkbox"/>		<a href="#">Edit</a>	<a href="#">Delete</a>

### Rugosity Measurements

Transect	1	2	3	4	5	6	7	8	9
1	6	5	2	3	7	8	10	12	5
2	12	10	5	5	5	6	6		

### Coral Details

Surveyor	Species	Width	Height	Bleaching	% Old Mort	% Other Rec Mort	% Disease Rec Mort	TL Pattern			
JEST	MMEA	10	5	P	10	5	5				
JEST	DSTO	5	4	PB	2	1	5	SL	UNK	OUK	
JEST	SSID	25	10	PB	5	2	0		DSD,DC	PRD	
JEST	ODIF	15	7		10	10	0			OGI,SC	
JEST	OFAV	50	40	PB	25	5	0			PRD	
JEST	SBOU	20	20		10	0	10	FA	UNK		

The 'Edit' link will redirect you back to your data entry page for that transect.



# Deleting Transect Data

If you decide that you would like to start your data entry over or if you accidentally entered data under the wrong transect or even the wrong site, you can 'Delete' or reset a transect.

This will delete all data entered under that transect and **reactivate the link** in your list of sites. Be careful not to delete someone else's data entry!

### Details - Site 1000

Site Code: 1000  
Depth Range:  
Unsuitable coral habitat?   
Complete?

Latitude: 25.799468  
Longitude: -80.095595

Region:  
Habitat: Contiguous Reef Other

Save

### Transect Details

Transect	Surveyor	Depth	Date	H.Diad.	D.Diad.	APAL	ACER	DCYL	No Corals?	Comments		
1	JEST	15.00	7/6/2020	Y	N	N	N	N	<input type="checkbox"/>		<a href="#">Edit</a>	<a href="#">Delete</a>
2	JEST	12.00	7/6/2020	N	N	N	N	N	<input type="checkbox"/>		<a href="#">Edit</a>	<a href="#">Delete</a>
3	JEST	12.00	7/6/2020						<input checked="" type="checkbox"/>		<a href="#">Edit</a>	<a href="#">Delete</a>
4	JEST	12.00	7/6/2020						<input type="checkbox"/>		<a href="#">Edit</a>	<a href="#">Delete</a>

### Rugosity Measurements

Transect	1	2	3	4	5	6	7	8	9	10
1	6	5	2	3	7	8	10	12	5	5
2	12	10	5	5	5	6	6			

### Coral Details

Surveyor	Species	Width	Height	Bleaching	% Old Mort	% Other Rec Mort	% Disease Rec Mort	TL Pattern
JEST	MMEA	10	5	P	10	5	5	
JEST	DSTO	5	4	PB	2	1	5	
JEST	SSID	25	10	PB	5	2	0	DSD,DC PRD
JEST	ODIF	15	7		10	10	0	OGI,SC
JEST	OFAV	50	40	PB	25	5	0	PRD
JEST	SBOU	20	20		10	0	10	FA UNK

By clicking 'Delete', all data will be removed and the transect link will show no data entry for that transect.

# Quality Assuring (QA) Your Data Entries

Once you finish entering your data, PLEASE, PLEASE, PLEASE, review all your entries to assure that they are correct. To review your data, click the corresponding Site Code from your list of survey sites. This will take you to the Site Details page which is a read-only view of the data as seen below.

Review all site information especially your coordinates.

Site Code: W1404      Latitude: 24.644      Longitude: -82.81897      gas--Dry Tortugas NP      lagoon Reef Other

Depth Range: 29

Unsuitable coral habitat?       Complete?

[Save](#)

## Transect Details

Transect	Surveyor	Depth	Date	H. Diad	D. Diad	APAL	ACER	DCYL	No Corals?	Comments	Edit	Delete
1	EVHO2	11.00	9/15/2022	N	N	N	Y	N	<input type="checkbox"/>		<a href="#">Edit</a>	<a href="#">Delete</a>
2	CAHA1	12.00	9/15/2022	N	N	N	Y	N	<input type="checkbox"/>		<a href="#">Edit</a>	<a href="#">Delete</a>
3	TARA	10.00	9/15/2022						<input type="checkbox"/>	T3- no juvs	<a href="#">Edit</a>	<a href="#">Delete</a>
4	TARA	10.00	9/15/2022						<input type="checkbox"/>		<a href="#">Edit</a>	<a href="#">Delete</a>

## Rugosity Measurements

Transect	1	2	3	4	5	6	7	8	9	10
1	39	34	14	11	7	8	10	4	13	18
2	22	12	16	12	11	10	15	10	12	68

Are there any missing rugosity measurements for T1 and T2?

## Coral Details

Surveyor	Species	Width	Height	Bleaching	% Old Mort	% Other Rec Mort	% Disease Rec Mort	TL Pattern
EVHO2	PAST	5	3		10	0	0	
EVHO2	PAST	5	1		0	0	0	
EVHO2	PAST	14	6		10	0	0	
EVHO2	SSID	46	12		82	0	0	
EVHO2	PAST	10	4		25	0	0	
EVHO2	PPOR	8	2	PB	0	0	0	

Using your underwater datasheet, review all data entries to be sure they are the same. The surveyor code to the left of each entry will show you which person the data is associated with.

# 'Complete' Your Data Entry

**Again, please QA your data after you have entered and saved it!**

It is recommended that someone else from your team review your data as well to assure your entries are accurate and complete.

Once data entry and QA are finished for ALL transects at a site, please mark it as 'Complete' within the data entry system to show that no further action is needed for that site.

**This can only be done in the Site Details page.**

To mark a site as completed:

First click on the Site Code from your list of sites.

Then, within the Site Details page, check the box next to 'Complete?' as seen below.

Last, press the 'Save' button to the right.

Details - Site W1404

Site Code: W1404  
Depth Range: 29  
Latitude: 24.644  
Longitude: -82.81897  
Region: Tortugas--Dry Tortugas NP  
Habitat: Contiguous Reef Other

Unsuitable coral habitat?   
Complete?

Save

### Transect Details

Transect	Surveyor	Depth	Date	H. Diad	D. Diad	APAL	ACER	DCYL	No Corals?	Comments	Edit	Delete
1	EVHO2	11.00	9/15/2022	N	N	N	Y	N	<input type="checkbox"/>		Edit	Delete
2	CAHA1	12.00	9/15/2022	N	N	N	Y	N	<input type="checkbox"/>		Edit	Delete
3	TARA	10.00	9/15/2022						<input type="checkbox"/>	T3- no juvs	Edit	Delete
4	TARA	10.00	9/15/2022						<input type="checkbox"/>		Edit	Delete

### Rugosity Measurements

Transect	1	2	3	4	5	6	7	8	9	10
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# Please Scan Your Datasheets

Scanned datasheets will be used during the comprehensive data QA at the end of the season. Please scan your datasheets and email them to the DRM coordinator ([CoralDRM@MyFWC.com](mailto:CoralDRM@MyFWC.com)).

You can choose to scan and email datasheets periodically throughout the season or all at once at the end of the season. Deadline is November 15<sup>th</sup>.

When you email your scanned data, please separate each file by surveyor and order them by date. This will help locate site or transect information if needed during the comprehensive QA of the data at the end of the season.

It is also recommended that you keep your original underwater datasheets until January 2024 in the case that there is a question with your data and the scanned file is not clear.

Entered		Transect:		Rugosity Msmts:			P/A		Habitat:		
DRM Code: 1445		① / 2 / 3 / 4		1. 75	2. 80	3. 70	Diad.	Isolated Reef			
Surveyor: AV		Shared? Y / N		4. 80	5. 120	6. 70	ACER	Contiguous Reef Spur and Grv.			
Lat:		Buddy:		7. 170	8. 90	9. 70	APAL	Contiguous Reef Other			
Long:				10. 50			DCYL	Reef Rubble			
Date: 9/10/22	Depth: 53			Tissue Loss Disease							
Species Code	Width (cm)	Height (cm)	Bleaching P, PB, BL	% Old Mort	Other % Recent Mort	Disease % Recent Mort	TL Rate Fast, Slow	Disease Condition(s)	Other Condition(s)	Scientific Name Transect 3 & 4 in Grey	Sp. Codes
1 MCAV	32	24								<i>Colpophyllia natans</i>	ONAT
2 PFUR	21	13		25						<i>Bichocoenia stokesi</i>	DSTO
3 PAST	18	7		2						<i>Diploria lab. antioformis</i>	DLAB
4 SSID	7	3								<i>Mesastrea asahii</i>	YMEA
5 OFRA	35	16		5		10	S	STL		<i>Mussa angulosa</i>	MANG
6 OFRA	47	35		20		5	S	STL		<i>Mycetophyllia alliciae</i>	INAL
7 OFRA	32	12		5		20	F	STL		<i>Mycetophyllia retosa</i>	MEER
8 MCAV	45	25								<i>Mycetophyllia lamarekiana</i>	MLAM
9 PAST	22	14		3						<i>Pseudodiploria clivosa</i>	PCIV
10 SSID	6	3								<i>Pseudodiploria strigosa</i>	PSTR
11 OFAV	15	48		60		10	F	STL		<i>Acropora cervicornis</i>	ACER
12 MCAV	57	52								<i>Acropora palmata</i>	APAL
13 OFAV	70	45		80		10	F	STL		<i>Agaricia agaricites</i>	AAGA
14 OFAV	280	150		25		0				<i>Agaricia lamarki</i>	ALAM
15 OFRA	33	10				8	F	STL		<i>Dendogrya cylindrus</i>	DCYL
16 CNAT	145	32		30		5	S	STL		<i>Eusmilia fastigiata</i>	EFAS
17 SSID	21	2	P	5						<i>Favia fragum</i>	FFRA
18 HCUC	7	1								<i>Helioseris cucullata</i>	HCUC
19 MCAV	33	28		5						<i>Isophyllia spp</i>	ISOP
20 OFAV	25	2		10						<i>Madracis auretenra</i>	MAUR
21 OFAV	100	35		40		15	F	STL		<i>Madracis decactis</i>	MDEC
22 SSID	17	5		10		8	F	STL		<i>Maricinia areolata</i>	MARE
23 MCAV	35	24		5						<i>Montastrea cavernosa</i>	MCAV
24 SSID	5	3								<i>Mycetophyllia spp</i>	MYCE
25 OFAV	27	11		2						<i>Oculina sp.</i>	OCUL
26 OFRA	36	21		50						<i>Orbicella annularis</i>	OANN
27 OFRA	50	60		10						<i>Orbicella faveolata</i>	OFAV
28 SSID	10	2								<i>Orbicella franki</i>	OFRA





Click on the below links to access the 'Disturbance Response Monitoring' surveyor training modules, resources and Quick Look Reports.

## Training Modules

- LESSON 1 - Introduction to FRRP and DRM
- LESSON 2 - DRM Sampling Design
- LESSON 3 - DRM In-Water Methodology
- LESSON 4 - Coral Demographic Training
- LESSON 5 - Coral Condition Training
- LESSON 6 - DRM Website and Data Entry Training
- LESSON 7 - Coral Species Review
- LESSON 8 - Juvenile Coral ID Training
- LESSON 9 - Coral ID & Condition Practice
- LESSON 10 - *Diadema antillarum* Training

## Resources

- FWC Photo Release Form
- DRM Google Drive (to upload DRM images)
- Florida Reef Tract Coral Bleaching Response Plan
- DRM In-Water Protocol
- DRM Transect Datasheet
- DRM In-Water Consistency Training
- DRM Data Entry Protocol
- Percent Coral Mortality Visual Aid
- Subregion-Zones Surveyed by Year
- DRM Juvenile Guide
- AGRRA Response Network – *Diadema* and *Unomia* Information

The *DRM 2024 Images* Google Drive folder can be accessed from the link on this page.

## Quick Look Reports - Survey summaries and results


- 2011 Summer DRM Quick Look Report
- 2012 Summer DRM Quick Look Report
- 2013 Summer DRM Quick Look Report
- 2014 Summer DRM Quick Look Report
- 2015 Winter DRM Quick Look Report

# DRM Images – Google Drive

It is highly encouraged for surveyors to take pictures of any coral they cannot identify or of any coral conditions that are suspicious.

A Google Drive folder is available for uploading images collected during DRM surveys. This folder will act as the central repository for sharing images among the DRM partners.

The link for the ‘DRM 2024 Images’ Google Drive folder is an open access folder, available on the “Surveyor Trainings and Resources” page of the DRM website. If you have issues accessing the folder/uploading photos, please email the DRM Program Manager.

 **Permission to Use Image**

I hereby grant the Florida Fish and Wildlife Conservation Commission (FWC) or FWC's assigns nonexclusive, irrevocable permission to use, edit, alter, copy, exhibit, publish and/or distribute my photographs, videos, or likeness for purposes of publicizing the Florida Fish and Wildlife Conservation Commission programs or for any other lawful purpose without payment or any other consideration.\* I waive the right to inspect or approve the finished product, including written or electronic copy, wherein my likeness appears.

I hereby hold harmless and release and forever discharge the FWC from all claims, demands, and causes of action which I, my heirs, representatives, executors, administrators, or any other persons acting on my behalf or on behalf of my estate have or may have by reason of this authorization.

\_\_\_\_\_  
(Signature) (Date)

\_\_\_\_\_  
(Printed Name) (Date)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(City, ST, ZIP)

\_\_\_\_\_  
(Phone)

\_\_\_\_\_  
(Email)

If under 18, parent or guardian signature is required:

\_\_\_\_\_  
(Parent/Guardian's Signature) (Date)

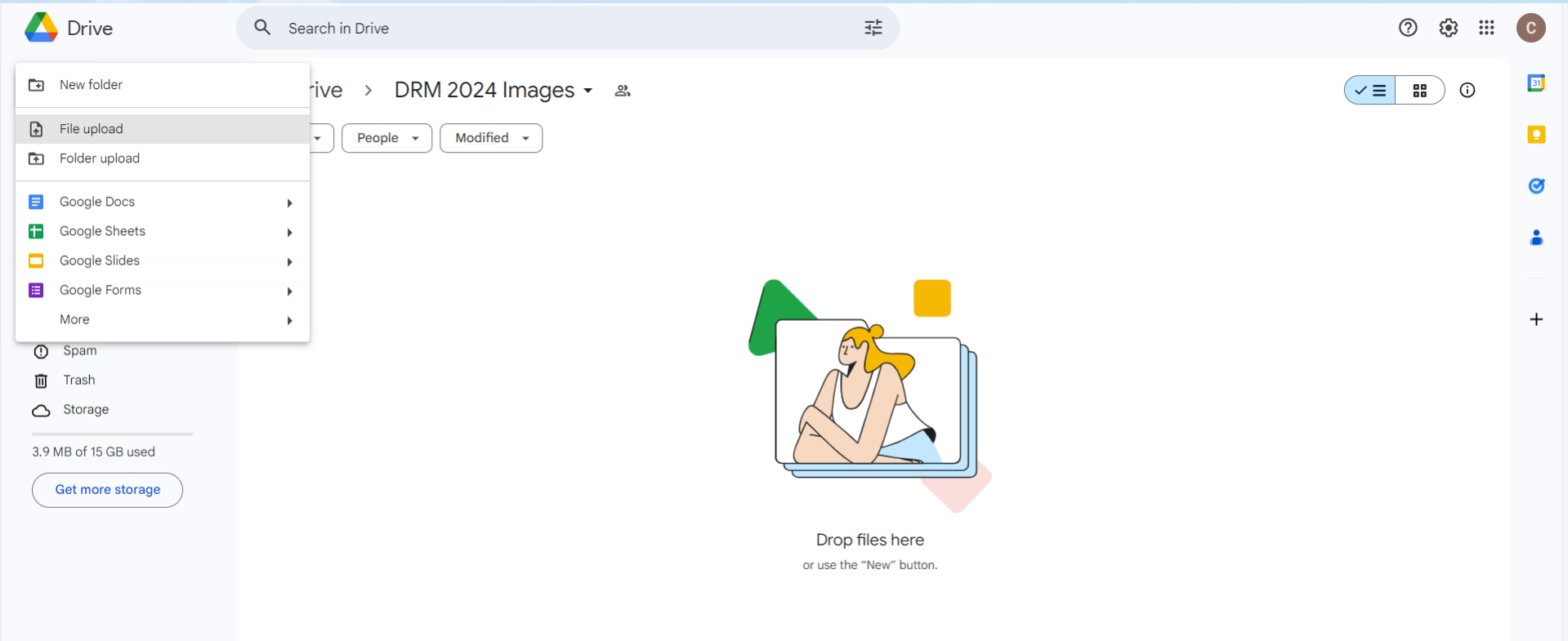
\_\_\_\_\_  
(Subject's Signature) (Date)

\_\_\_\_\_  
(Printed Name) (Date)

\*When possible, a photo credit line will be used with the photographs, such as, but not limited to "Photo courtesy of (name)." The photographs covered by this "Permission to Use Image" are attached.

Prior to uploading images, a photo release form must be signed by a Team Lead and then uploaded to the folder. A link to the blank photo release form is provided on the DRM website.

# DRM Images – Google Drive



The image shows a screenshot of the Google Drive web interface. At the top, the 'Drive' logo is on the left, and a search bar with the text 'Search in Drive' is in the center. On the right, there are icons for help, settings, and a user profile. Below the search bar, the breadcrumb path reads 'Drive > DRM 2024 Images'. To the right of the path are buttons for 'View' (list view), 'Grid view', and 'Info'. A 'New' button is open, showing a dropdown menu with options: 'New folder', 'File upload', 'Folder upload', 'Google Docs', 'Google Sheets', 'Google Slides', 'Google Forms', and 'More'. Below the menu are 'Spam', 'Trash', and 'Storage' sections. The storage section shows '3.9 MB of 15 GB used' and a 'Get more storage' button. In the center of the folder view, there is a large illustration of a woman sitting on a laptop, with the text 'Drop files here or use the "New" button.' below it. The bottom half of the image is a blurred background of turquoise water.

## Photo Labeling Instructions for the DRM Google Drive folder:

Prior to uploading images to the 'DRM 2024 Images' Google Drive folder, please label photos according to the below instructions.

- Label Format: ' DRM Site Code \_Transect#\_ Date \_Last name of photographer'

- o **Example:** 1002\_1\_9-12-24\_Stein (1)

- o 1002\_1\_9-12-24\_Stein (2)

- o 1002\_1\_9-12-24\_Stein (3)

- o Etc..

- It may be helpful to take a photo of your underwater datasheet and then a picture of the colony that you want to capture. This will help with post-dive photo labeling.

- If there is a diver(s) captured in your photo that you would like to recognize, please put their last name *after* the photographer's last name.

- o **Example:** 1002\_4\_9-12-24\_Stein\_Huebner

Search in Drive



My Drive > DRM 2024 Images ▾



1 selected



Name ↑

Owner

Last modified ▾

File size



1002\_1\_9-12-24\_Stein (1) .JPG



me

2:00 PM me

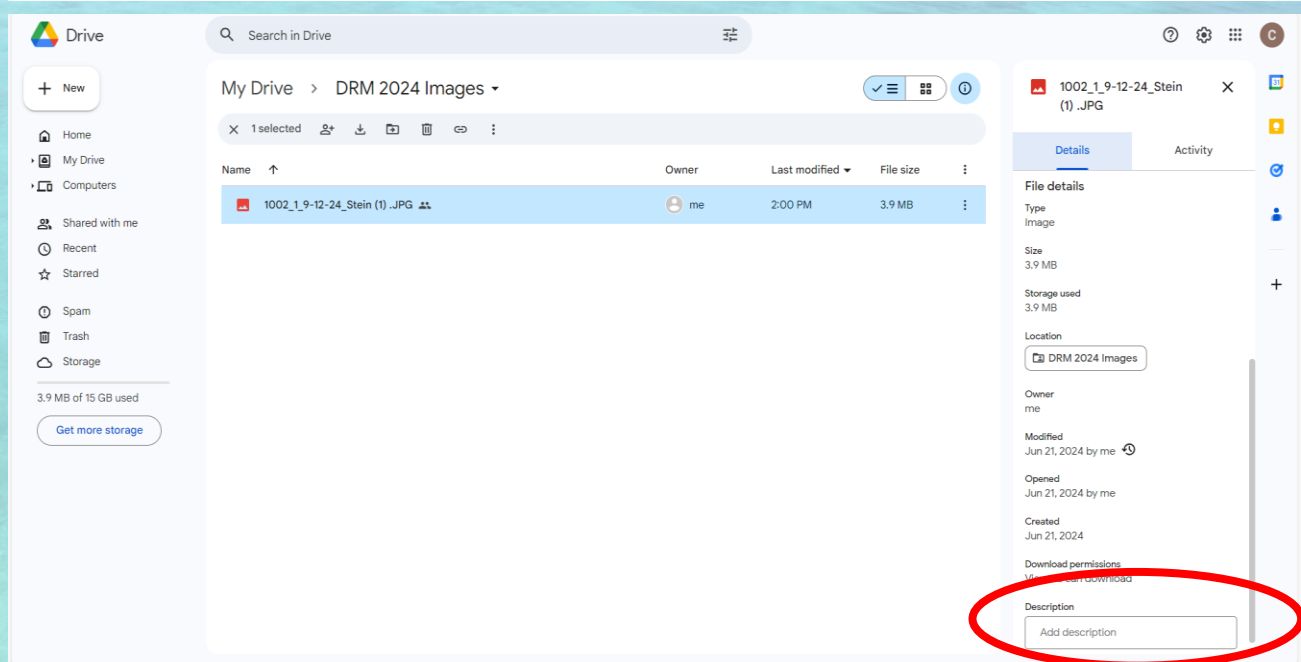
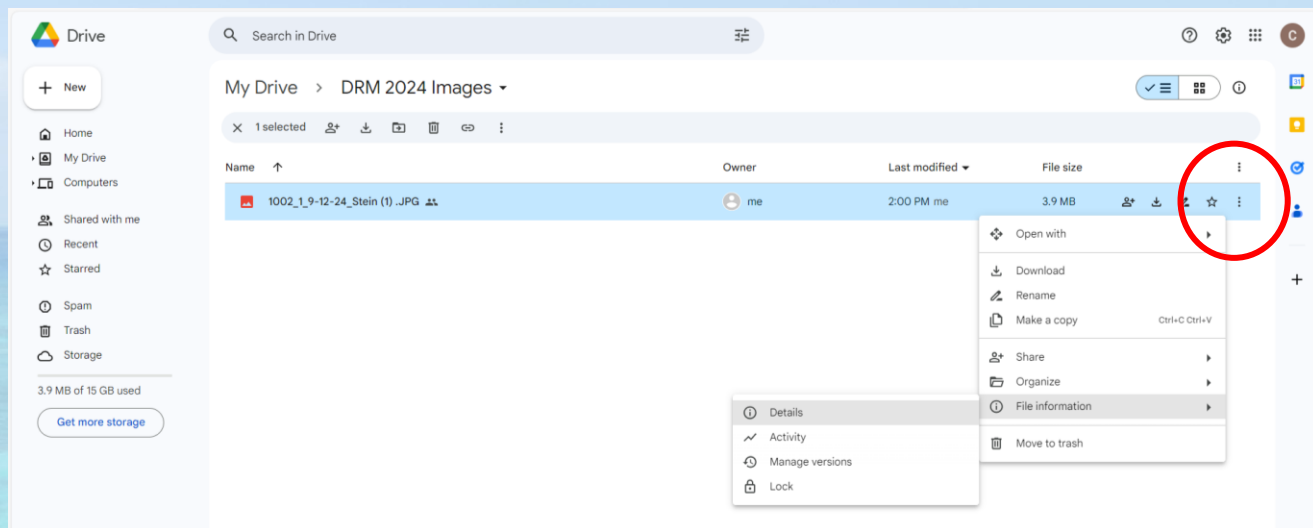
3.9 MB





# DRM Images – Google Drive

If there is an additional citation, caption or descriptive information that you would like to accompany your photos click the three dots to the right of the file name and scroll down to the description box to enter the additional information.



# Questions and Feedback

Both the DRM Website and DRM Data portal were revised again for this 2024 season to accommodate the new methods, better validate data fields, and provide additional resources for the partners.

We encourage you to provide feedback so that we can correct any issues for the future or make the site more user-friendly for data entry purposes.

Please direct your questions or data entry issues to Jennifer Stein and Cailin Harrell (CoralDRM@MyFWC.com).

