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## Data from: “Behavioural, physiological, and biochemical responses of two species of scleractinian coral to butterflyfish predation”

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### 1. Author information

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### 2. Date of data collection: 2024

### 3. Geographic location of data collection: One Tree Island, Capricorn-Bunker group, southern Great Barrier Reef, Australia

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**R script** to replicate our analyses: GitHub repository <https://github.com/THTonyHsu/Coral-predation-stress.git>

## Methodological Information

A detailed description of data acquisition and processing can be found in the published manuscript in the *Marine Environmental Research* (accepted).

## Description of data structure

These data were generated to understand effects of butterflyfish predation on the behavioural, physiological, and biochemical responses of two scleractinian species using a tank experiment on One Tree Island.

1. **File 1:** PredationStress\_Hsu\_et\_al\_2026\_Bites.csv  
Bites taken from individual coral colony in 5-min observation
2. **File 2:** PredationStress\_Hsu\_et\_al\_2026\_Fatty\_acids.csv  
Absolute concentration of fatty acids of each coral colony quantified by GC-MS
3. **File 3:** PredationStress\_Hsu\_et\_al\_2026\_Polyp.csv  
randomly stratified points to quantify polyp status of each coral colony
4. **File 4:** PredationStress\_Hsu\_et\_al\_2026\_Tank\_weight.csv  
Buoyant weight before and after the experiment, dry weight, ash-free dry weight, and weight of dry samples for lipid extraction
5. **File 5:** PredationStress\_Hsu\_et\_al\_2026\_Yield.csv  
Photosynthetic yield (Fv/Fm) measured by an underwater fluorometer (DIVING-PAM-II)

## Data-specific information

*File 1: PredationStress\_Hsu\_et\_al\_2026\_Bites.csv*

1. Number of variables/columns: 10
2. Number of cases/rows: 505  
  
Missing data codes: None
3. Variable List
  - Column A - Date
  - Column B - Day
  - Column C - ToD: times of day
  - Column D - Table
  - Column E - Tank: short code of tank ID
  - Column F - Tank.ID: full code of tank ID
  - Column G - Fish: no. of fish
  - Column H - Coral
  - Column I - Coral.ID
  - Column J - Bites
4. Abbreviations used
  - for ToD:
    - Morn: Morning (~8 am)
    - Noon: Noon (~12 pm)
    - Arvo: Afternoon (~4 pm)
  - for Fish:
    - F0: no fish

- F1: 1 fish
- F2: 2 fish

*File 2: PredationStress\_Hsu\_et\_al\_2026\_Fatty\_acids.csv*

1. Number of variables/columns: 16
2. Number of cases/rows: 2958
3. Missing data codes: NA
4. Variable List
  - Column A - Fish
  - Column B - Coral
  - Column C - Coral.ID
  - Column D - SID: sample ID
  - Column E - Name: chemical species name
  - Column F - Area: peak area
  - Column G - Std.Ret.Time: molecule retention time
  - Column H - RF: response factor
  - Column I - Class: class of fatty acids as determined by the number of double bonds
  - Column J - Type: polar (PL) or non-polar (NP) fractions
  - Column K - Conc\_IS: concentration of the internal standards
  - Column L - Area\_IS: peak area of the internal standards
  - Column M - Conc: absolute concentration of the sample
  - Column N - OM: % of organic matter in dry coral samples
  - Column O - Amount: the amount of dry coral samples used for lipid extraction
  - Column P - Conc\_std: concentration of the sample corrected by internal standards
5. Abbreviations used
  - for Fish:
    - F0: no fish
    - F1: 1 fish
    - F2: 2 fish
  - for Class:
    - SFA: saturated fatty acid
    - MUFA: mono-unsaturated fatty acid
    - PUFA: poly-unsaturated fatty acid
    - Bacterial: odd-chained fatty acid from bacteria

*File 3: PredationStress\_Hsu\_et\_al\_2026\_Polyp.csv*

1. Number of variables/columns: 9
2. Number of cases/rows: 145
3. Missing data codes: None
4. Variable List
  - Column A - Date

- Column B - Day
- Column C - Coral
- Column D - Coral.ID
- Column E - Withdrawn: polyps withdrawn
- Column F - Extended: polyps extended
- Column G - NoPolyp: live tissue without polyps
- Column H - Abiotic: abiotic substrate
- Column I - Skeleton: dead coral skeleton

*File 4: PredationStress\_Hsu\_et\_al\_2026\_Tank\_weight.csv*

1. Number of variables/columns: 13
2. Number of cases/rows: 37

Missing data codes: None

3. Variable List

- Column A - Table
- Column B - Tank
- Column C - Tank.ID
- Column D - Fish
- Column E - Coral
- Column F - Coral.ID
- Column G - BuoW0: buoyant weight of each coral colony at the beginning of the experiment
- Column H - BuoW1: buoyant weight of each coral colony at the end of the experiment
- Column I - DWcoral: weight of freeze-dried coral samples
- Column J - DWcoral\_Al: weight of freeze-dried coral samples + aluminium tray
- Column K - DWash\_Al: weight of remaining ash (after combusted in a muffle furnace at 450°C for 12 h.) + aluminium tray
- Column L - Wafdw: ash-free dry weight = DWcoral\_Al - DWash\_Al
- Column M - DW\_extract: the amount of dry coral samples used for lipid extraction

*File 5: PredationStress\_Hsu\_et\_al\_2026\_Yield.csv*

1. Number of variables/columns: 11
2. Number of cases/rows: 442

Missing data codes: None

3. Variable List

- Column A - Date
- Column B - Day
- Column C - Table
- Column D - Tank
- Column E - Tank.ID
- Column F - Fish

- Column G - Coral
- Column H - Coral.ID
- Column I - Fv: variable fluorescence in a darkened sample
- Column J - Fm: maximal fluorescence in a darkened sample
- Column K - Yield