**Sample Field Data Sheets**

**Metadata**

Metadata is important for sharing information with others, finding correlations, and looking at trends over time. For example, site condition information is important as more or less organisms might be found on a cloudy or windy day. Suggested websites to gather metadata information:

***Low Tide Time Time, Height, and Reference Location****:*

* [http://tidesandcurrents.noaa.gov](http://tidesandcurrents.noaa.gov/%22%20%5Ct%20%22_blank)
* Under “Products” in upper left go to “NOAA tide predictions”
* Click on “Hawaii” under “Pacific”.
* Then click on location closest to your intertidal site. Include this location on your data sheet.

***Wind Speed***

* [iwindsurf.com](http://iwindsurf.com/%22%20%5Ct%20%22_blank)
* Under “North America” click on progressively more detailed regions to location closest to your intertidal site. Include this location on your data sheet.
* **\*\*Must be done within 24 hrs of field trip.\*\***

***Waves****:*

* For Oahu: http://www.prh.noaa.gov/hnl/pages/SRF.php (also for wind)
* For other islands: <http://www.prh.noaa.gov/hnl/pages/marine.php>
	+ Click on the “zone name” closest to your site. Record this location on your data sheet.
	+ Scroll to bottom of page for wind and waves for week.
* **\*\*These sites are updated weekly, should be done same week as field trip\*\***

***Rainfall:***

* <http://www.prh.noaa.gov/hnl/>
* Click on nearest “Point Forecasts for Selected Locations Shortcuts” location. Include this location on your data sheet.
* Under “More Information” on right side of screen click on 3 day history
* Look at precipitation (right columns) for rainfall in inches in past 3 days and “wind” for (site also good for wind, weather, and temperature)
* **\*\*Should be done same day as field trip.\*\***

**Transect Data Sheet**

It is important to write down names (e.g., students, science assistant if you have one) for linking purposes. The transect line number refers to the group’s transect placement in relation to all other groups. When looking out towards the ocean, number the transect line on the far left as “#1”, the next transect to the right is #2, etc. Transect line number information will become important when looking at zonation.

You should take transect point intercept data at least every meter. It is unlikely that your site matches the number of rows in this example data sheet. Modify the sheet to reflect your field transect length by adding or deleting rows to the data table.

**Quadrat Data Sheet**

This is an example site; change out the species to the ones most commonly found at your site (you can use information from 10 years ago or information you gathered when scoping out your area). Additional species can be written in the blank spaces of the first column.

If you are collecting data using multiple quadrat methods, print separate sheets and clearly label which sheet is for point counts and which is for percent cover. If you are collecting quadrat data from more than five locations, print additional sheets. **There needs to be a minimum of 25 quadrats per intertidal area on each field trip**.

Indicate the designated transect points your class will place their quadrats in the top row of the columns. The transect points can be any standard distance (e.g., every 0.5 m or 1 m) depending on the size of your study site and the number of students you have (remember, you need 25 quadrats per field trip).

**Metadata (Take a lot of pictures!)**

|  |  |
| --- | --- |
| Teacher Name:  | Date:  |
| Site: | GPS of center of location: |
| Low tide time: | Low tide height: | Low tide reference location: |
| # of students: | # of science assistants (list names): |
| # of transects: | Length of transects: | Distance between transect pts (e.g., 1 m, 0.5 m): |
| # of quadrats/transect: | Quadrat method(s): | Distance between quadrat pts (e.g., 1 m, 2 m): |
| Start bio survey time: | End bio survey time: | Substrate (e.g., basalt, limestone, manmade): |
| Wind speed (Beaufort scale, mph, average): \_\_\_\_\_ 0–1 (calm)\_\_\_\_\_ 1–3 (light air)\_\_\_\_\_ 4–7 (light breeze, wind felt on face, leaves rustle)\_\_\_\_\_ 8–12 (gentle breeze, leaves in constant motion)\_\_\_\_\_ 12–18 (moderate breeze, raises dust & loose paper, small branches move)\_\_\_\_\_ 19–24 (fresh breeze, small trees sway)\_\_\_\_\_ 25–31 (strong breeze, large branches move, hard to use umbrella)\_\_\_\_\_ 32–38 (near gale, whole trees move)\_\_\_\_\_ 39–46 (gale, wind impedes walking) | Size of substrate (percent of each):\_\_\_\_\_ Bench (continuous rock)\_\_\_\_\_ Boulder (greater than or equal to human head)\_\_\_\_\_ Cobble (tennis ball to human head)\_\_\_\_\_ Pebble (pea to tennis ball size)\_\_\_\_\_ Granule (BB to pea size)\_\_\_\_\_ Coarse sand (pinhead to BB size)\_\_\_\_\_ Fine sand (sugar/salt to pinhead size) |
| Weather (e.g., sunny, partly cloudy, rainy): |
| Rain events in prior 3 days? Yes No  | If Yes, amount of rain? |
| Evidence of stressful events (e.g., bleached algae, dead fish, dead urchin tests) | Waves (describe, particularly height): |
| Is there a stream or other freshwater input near site?  Yes No  | If Yes, describe freshwater input: |
| Sand in grooves/pools? Yes No  | Sandy beach to right or left? Yes No | Sandy beach above? Yes No |
| # of people at site (besides students): | # of people fishing  | # of people collecting What? |

**ON BACK**: Draw picture of site, including transect location(s)

*Additional notes:*

**Water Quality – Temperature**

|  |  |
| --- | --- |
| Name (s) of people who took temperature readings:  | Site:  |
| Describe instrumentation:  |
| Air temperature: | Time took air temperature: |

**Draw a picture of the site. Include the area(s) where you took the temperature of the water:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sample****#** | **Location** | **Water Temperature (C)** | **Time** | **Notes** |
| **1** |  |  |  |  |
| **2** |  |  |  |  |
| **3** |  |  |  |  |
| **4** |  |  |  |  |
| **5** |  |  |  |  |
| **6** |  |  |  |  |
| **7** |  |  |  |  |
| **8** |  |  |  |  |
| **9** |  |  |  |  |
| **10** |  |  |  |  |

**Additional notes:**

**Water Quality – Salinity**

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| Name (s) of people who took salinity measurements:  | Site:  |
| Describe instrumentation:  |

**Draw a picture of the site. Include the area(s) where you took the salinity of the water:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sample****#** | **Location** | **Salinity** | **Time** | **Notes** |
| **1** |  |  |  |  |
| **2** |  |  |  |  |
| **3** |  |  |  |  |
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**Additional notes:**

**Water Quality – Dissolved Oxygen (DO)**

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| Name (s) of people who took DO readings:  | Site:  |
| Describe instrumentation:  |

**Draw a picture of the site. Include the area(s) where you took DO readings:**

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| --- | --- | --- | --- | --- |
| **Sample****#** | **Location** | **DO** | **Time** | **Notes** |
| **1** |  |  |  |  |
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| **5** |  |  |  |  |
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**Additional notes:**

**Water Quality – Turbidity**

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| Name (s) of people who took turbidity readings:  | Site:  |
| Describe instrumentation:  |

**Draw a picture of the site. Include the area(s) where you took turbidity readings:**

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| --- | --- | --- | --- | --- |
| **Sample****#** | **Location** | **Turbidity** | **Time** | **Notes** |
| **1** |  |  |  |  |
| **2** |  |  |  |  |
| **3** |  |  |  |  |
| **4** |  |  |  |  |
| **5** |  |  |  |  |
| **6** |  |  |  |  |

**Additional notes:**

**Transect Data Sheet**

Name(s):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**\_\_**Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_Transect Line #: \_\_\_\_Start time: \_\_\_\_\_\_\_ End Time: \_\_\_\_\_\_\_\_

Science Assistant: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Point-Intercept Transect**

Record which SINGLE species (e.g., *Padina spp*.) or substrate (e.g., sand) you find directly underneath the point. Record only the organism on the top. Do not count things that are temporary like trash, wood, leaves, or water.

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| **Transect Point (m)**  | **Organism or Substrate** |
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**Quadrat Data Sheet** (Sheet \_\_\_\_\_ of \_\_\_\_\_ total number of sheets)

Name(s):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**\_\_\_**Date:\_\_\_\_\_\_\_\_\_\_\_\_\_

Location: \_Diamond Head\_\_Transect Line #: \_\_\_\_Start time: \_\_\_\_\_\_\_ End Time: \_\_\_\_\_\_\_\_

|  |  |
| --- | --- |
| **Algae** *(write in additional species, describe/pic/collect if unk.)* | **Quadrat Placement** |
| **Genus** | **Species** |  |  |  |  |  |
| *Acanthophora*  | *spicifera* |  |  |  |  |  |
| *Asparagopsis*  | *taxiformis* |  |  |  |  |  |
| Blue-Green  |  |  |  |  |  |  |
| *Codium*  |  |  |  |  |  |  |
| Crustose Coralline (CCA) |  |  |  |  |  |
| *Dictyosphaeria*  |  |  |  |  |  |  |
| *Dictyota*  |  |  |  |  |  |  |
| *Dictyopteris*  |  |  |  |  |  |  |
| *Hypnea*  |  |  |  |  |  |  |
| *Laurencia* |  |  |  |  |  |  |
| *Liagora/Galaxuara* |  |  |  |  |  |  |
| *Padina* |  |  |  |  |  |  |
| *Sargassum*  |  |  |  |  |  |  |
| *Turbinaria*  | *ornata* |  |  |  |  |  |
| Turf |  |  |  |  |  |
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| **Invertebrates** *(write in additional sp., describe/pic if unk.)* |  |  |  |  |  |
| Actinopyga  |  |  |  |  |  |  |
| *Anthopleura* | *nigrescens* |  |  |  |  |  |
| *Echinometra* | *mathaei* |  |  |  |  |  |
| *Echinometra* | *oblonga* |  |  |  |  |  |
| Fireworm |  |  |  |  |  |  |
| *Holothuria* | *cinerascens* |  |  |  |  |  |
| *Holothuria* |  |  |  |  |  |  |
| *Isognomon* |  |  |  |  |  |  |
| *Ophiocoma* |  |  |  |  |  |  |
| *Siphonaria* | *normalis* |  |  |  |  |  |
| Sponge |  |  |  |  |  |  |
| *Tripneustes* | *gratillia* |  |  |  |  |  |
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| **Substrate** | Bare Rock |  |  |  |  |  |
|  | Sand |  |  |  |  |  |
|  | **Quadrat Totals** |  |  |  |  |  |

**Quadrat Data Sheet** (Sheet \_\_\_\_\_ of \_\_\_\_\_ total number of sheets)

Name(s):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**\_\_\_**Date:\_\_\_\_\_\_\_\_\_\_\_\_

Location: \_\_Waipuilani Beach\_\_\_Transect Line #: \_\_\_\_Start time: \_\_\_\_\_\_\_ End Time: \_\_\_\_\_\_\_\_

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| --- | --- |
| **Algae** *(write in additional species, describe/pic/collect if unk.)* | **Quadrat Placement** |
| **Genus** | **Species** |  |  |  |  |  |
| *Acanthophora*  | *spicifera* |  |  |  |  |  |
| *Asparagopsis*  | *taxiformis* |  |  |  |  |  |
| Blue-Green  |  |  |  |  |  |  |
| *Bryopsis*  | *pennata* |  |  |  |  |  |
| *Cladophora/Cladophoropsis* |  |  |  |  |  |
| *Colpomenia*  | *sinuosa* |  |  |  |  |  |
| Crustose Coralline (CCA) |  |  |  |  |  |
| *Hypnea*  | *musciformis* |  |  |  |  |  |
| *Laurencia* |  |  |  |  |  |  |
| *Padina* |  |  |  |  |  |  |
| *Sargassum*  |  |  |  |  |  |  |
| *Ulva* |  |  |  |  |  |  |
| Turf |  |  |  |  |  |
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| **Invertebrates** *(write in additional sp., describe/pic if unk.)* |  |  |  |  |  |
| *Morula* | *granulata* |  |  |  |  |  |
| *Nerita* | *picea* |  |  |  |  |  |
| *Ophiocoma* |  |  |  |  |  |  |
| Sponge |  |  |  |  |  |  |
| *Tripneustes* | *gratillia* |  |  |  |  |  |
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|  |  |  |  |  |  |
| **Substrate** | Bare Rock |  |  |  |  |  |
|  | Sand |  |  |  |  |  |
|  | **Quadrat Totals** |  |  |  |  |  |