NEW YORK STATE OF OPPORTUNITY | Hudson River Estuary Program
A Program of the New York State Department of Environmental Conservation

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

UPDATED DATA LINK: https://forms.gle/s1CK16V5mfNSvEkp6

A 'DAY IN THE LIFE' OF THE HUDSON & HARBOR

DATE_____

http://www.ldeo.columbia.edu/dayinthelife

PLEASE USE THIS 2022 SCAN CODE TO SEND US YOUR DATA VIA GOOGLE FORM WITHIN 24-48 HOURS:

Google Form: https://forms.gle/s1CK16V5mfNSvEkp6
Questions:
Margie Turrin, 845-365-8494
Email (preferable): mkt@ldeo.columbia.edu

PRIZE ALERT!

The groups that send in their data packets by **October 17th** will be entered into a drawing to win a PRIZE from the "Day in the Life" Team. And all teams that submit data will receive a 20 year Inforgraphic for their classroom!

NOTES FOR THE DAY:

- Do all or some of these tests: prioritizing salinity, D.O., & fish
- Supporting materials & activities are at the website link above
- Enter your data online, or email it to us ASAP.
- Be sure to include this cover sheet with your data

RECORDING SHEET I - BACKGROUND INFORMATION.

1. Site contact person_____
   Organization_____
   Street_____
   City_____State____Zip_____
   phone_____fax_____email_____
2. School/group name_____District_____
   Name of teacher/group leader_____
   Street_____
   City_____State_____ Zip_____
   Phone_____Fax_____Email_____
   Number of Students_____ Number of Adults_____
   Student grade level & course if applicable _____
3. Where are you sampling. Please be as specific as possible.
   _____
4. RIVER MILE: _____
   The Battery at the southern tip of Manhattan = River Mile 0
   The Federal Dam at Troy = River Mile 153

DITL Surroundings Data

Name_____ **Date**_____ **Location**_____

Your surroundings affect all the other data you collect! Examine & record the sample area.

LOCATION: *site name, city* **RIVER MILE:** Using Hudson River Estuary Map **LATITUDE & LONGITUDE:**	_____ _____ _____
AREA: *Describe your area in 1 sentence so someone could find your sample location.*	_____ _____ _____
SAMPLING SITE: *Check all that apply*	__Pier __Grassy __Forested __Parking Lot __Beach __Covered in vegetation __Banks altered __RipRap (Large rocks) __Wood Bulkhead __Concrete Bulkhead __Pipe entering the water __Marshy
SURROUNDING LAND USES: *Record as a percentage of 100%* *For example, 50% is half the usage*	___ Urban/residential ___Forested ___ Industrial/commercial ___Beach ___ Other (explain) _____
SHORELINE *Record as a percentage of 100%*	___Sandy ___ Muddy ___Rocky
RIVER BOTTOM: *Check all that apply:*	**Estimated Water Depth (cm)**_____ ___Bottom muddy ___Bottom sandy ___Bottom weedy ___Bottom rocky
WATER: *Describe the water itself*	____Calm ___Choppy
PLANTS IN THE WATER: *Record the **aquatic plants** (plants growing in the water) as a percentage of the total area.* ***IF NONE, please check None.***	% ____ Plant_____ % ____ Plant_____ % ____ Plant_____ % ____ Plant_____ % ____ Plant_____ % ____ Plant_____ _____No Plants in the water

DITL Surroundings Data

Name_____ **Date**_____ **Location**_____

SKETCH YOUR SAMPLING SITE: *Be sure to include a compass rose showing N/S/E/W and locate the river on your sketch, and note your sampling site.*

COMMERCIAL TRAFFIC: *Record any large boats, tugs, or barges. Record the name, color, direction & if it is light/loaded (Loaded barge with cargo sits lower in the water.)*

Time:	Name	Color	North or Southbound	Loaded or Light
Time:	Name	Color	North or Southbound	Loaded or Light
Time:	Name	Color	North or Southbound	Loaded or Light

RECREATIONAL TRAFFIC: *Record any sail, speed, or other rec. boats.*

Time:	Name	Color	North or Southbound	Loaded or Light
Time:	Name	Color	North or Southbound	Loaded or Light
Time:	Name	Color	North or Southbound	Loaded or Light

DITL Physical Conditions Data: Name_____Date_____ Location_____

TIDES – Semidiurnal Tides: 2 high tides & 2 low tides a day

Technique: Tide Stick: _____ OR Dock to Water: ____

Start time:_____ Water height (cm)_____ - - -

Check time:_____ Water height (cm)_____ ***Please Circle***: Falling Rising Slack

Check time:_____ Water height (cm)_____ ***Please Circle***: Falling Rising Slack

Check time:_____ Water height (cm)_____ ***Please Circle***: Falling Rising Slack

Check time:_____ Water height (cm)_____ ***Please Circle***: Falling Rising Slack

Check time:_____ Water height (cm)_____ ***Please Circle***: Falling Rising Slack

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CURRENTS –

*Knots = (cm/sec)/51.4

Time: _____ _____ Cm/sec _____*Knots ***Please Circle***: Ebb Flood Slack

Time: _____ _____ Cm/sec _____*Knots ***Please Circle***: Ebb Flood Slack

Time: _____ _____ Cm/sec _____*Knots ***Please Circle***: Ebb Flood Slack

Time: _____ _____ Cm/sec _____*Knots ***Please Circle***: Ebb Flood Slack

Record Metadata: Record anything about the shoreline that could cause the near shore to flow in a different direction than the current in the middle of the river (i.e. Pier, Cove, etc.)

_____

_____

AIR TEMPERATURE

°C = 0.556 X (°F - 32°)

°F = (1.8 X °C) + 32°

Time: _____ Air temperature: _____°F _____°C

Time: _____ Air temperature: _____°F _____°C

Time: _____ Air temperature: _____°F _____°C

WIND SPEED

Time: _____ Beaufort #:_____

Wind Meter:_____ ***Circle Units***: m/s - km/hr - mph - knots. Wind Direction (wind comes from): _____

CLOUD COVER

Time: _____

Clear(<25%): _____ Partly-Cloudy(26-50%): _____ Mostly-Cloudy(51-75%): _____ Overcast(>75%): _____

RAIN (PRECIPITATION) TODAY & WEATHER FOR THE PAST 3 DAYS-

Time: _____ Rain:___ If yes, how steady or how much (cm) did it rain?_____

Briefly describe the weather for the last 3 days: Rain, wind, unusual temperatures?

_____

DITL Turbidity Data **Name**_____**Date**_____ **Location**_____

TURBIDITY **- Expected High Turbidity in an Estuary. (Units vary depending on equipment)**

BE SURE TO MARK THE EQUPIMENT YOU ARE USING FOR THE TEST:

1. Long Sight Tube (cm): _____	2. Secchi Disk (cm): _____	3. Turbidimeter (NTU): _____

RECORD the correct unit *for the piece of equipment that you are using: feet, cm, meters, JTUs or NTUs*

Time: _____

Reading 1: _____ Reading 2: _____ Reading 3: _____ Average: _____

Time: _____

Reading 1: _____ Reading 2: _____ Reading 3: _____ Average: _____

Time: _____

Reading 1: _____ Reading 2: _____ Reading 3: _____ Average: _____

Observations

Can you describe how turbid your water is? Include color, visibility, how deep can you see into it?

DITL Chemical Data **Name**_____**Date**_____ **Location**_____

WATER TEMPERATURE **- Expected High Temperature in October would be ≤ 25ºC. Record both ºC & ºF**

ºC = 0.556 X (ºF - 32º)	ºF = (1.8 X ºC) + 32º

Time: _____ COLLECTED WATER IN BUCKET: YES / NO If NO, Approximate Water Depth: (ft):_____

Reading 1: _____ ºC _____ºF Reading 2: _____ ºC _____ºF Average: _____ ºC _____ ºF

Time: _____ COLLECTED WATER IN BUCKET: YES / NO If NO, Approximate Water Depth: (ft):_____

Reading 1: _____ ºC _____ºF Reading 2: _____ ºC _____ºF Average: _____ ºC _____ ºF

Time: _____ COLLECTED WATER IN BUCKET: YES / NO If NO, Approximate Water Depth: (ft):_____

Reading 1: _____ ºC _____ºF Reading 2: _____ ºC _____ºF Average: _____ ºC _____ ºF

SALINITY **- Expected Range: ~40 ppm in freshwater section up to 30,000 ppm (30 ppt) in harbor**.

BE SURE TO MARK THE EQUIPMENT YOU ARE USING FOR THE TEST (units are listed by equipment)**:**

Quantab Strips (PPM Cl^-)**:** High Range: ___ Low Range: ___ *Record the* **PPM CHLORIDE** *(3rd column on Quantab bottle)*	Meter/Probe (PPT)_____	Refractometer (PPT)_____	Hydrometer (PPT)_____

Time: _____ Reading 1: _____ Reading 2: _____ Reading 3: _____ (UNITS!)

Time: _____ Reading 1: _____ Reading 2: _____ Reading 3: _____ (UNITS!)

Time: _____ Reading 1: _____ Reading 2: _____ Reading 3: _____ (UNITS!)

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pH (POTENTIAL HYDROGEN) **- Expected Range: Most fish prefer 6.5-8.5** (**NO UNITS for pH**).

BE SURE TO MARK THE EQUIPMENT YOU ARE USING FOR THE TEST:

Test Strips____	Color Match Test Kit____	Meter____	pH Pen____

Time: _____ Reading 1: _____ Reading 2: _____ Reading 3: _____

Time: _____ Reading 1: _____ Reading 2: _____ Reading 3: _____

Time: _____ Reading 1: _____ Reading 2: _____ Reading 3: _____

ALKALINITY- **Expected Range: 80-100 mg/L.** A measure of the water's buffering capacity **(Units: mg/L)**

Method:_____ Time: _____ Reading 1:_____ Reading 2:_____ Reading 3:_____

NITRATE- **Expected Range: <1 mg/L.** A nutrient used by plants & animals for growth **(Units: mg/L)**

Method:_____ Time: _____ Reading 1:_____ Reading 2:_____ Reading 3:_____

PHOSPHATE- **Expected Range: <1 mg/L.** Plant nutrient that occurs in rocks, soil, & animal waste **(Units: mg/L)**

Method:_____ Time: _____ Reading 1:_____ Reading 2:_____ Reading 3:_____

DITL Chemical Data **Name**_____**Date**_____ **Location**_____

DISSOLVED OXYGEN (D.O.) **- Healthy Expected Range: 5.0-11.0 mg/L. (Units: mg/L = PPM)**

BE SURE TO MARK THE EQUIPMENT YOU ARE USING FOR THE TEST

Meter/Probe_____	Drop Count Kit_____	Other_____

Time: _____ Water temperature in °C: _____ DO (mg/L or PPM): _____ % saturation: _____

Time: _____ Water temperature in °C: _____ DO (mg/L or PPM): _____ % saturation: _____

Time: _____ Water temperature in °C: _____ DO (mg/L or PPM): _____ % saturation: _____

% SATURATION OF DISSOLVED OXYGEN (D.O.) - Healthy Expected Range 90% or above

1. Locate your DO reading on the bottom scale (ppm = mg/L), and the water temperature (°C) on the top scale.
2. Draw a straight line between the temperature and DO.
3. The % saturation is the value where the line intercepts the saturation scale.

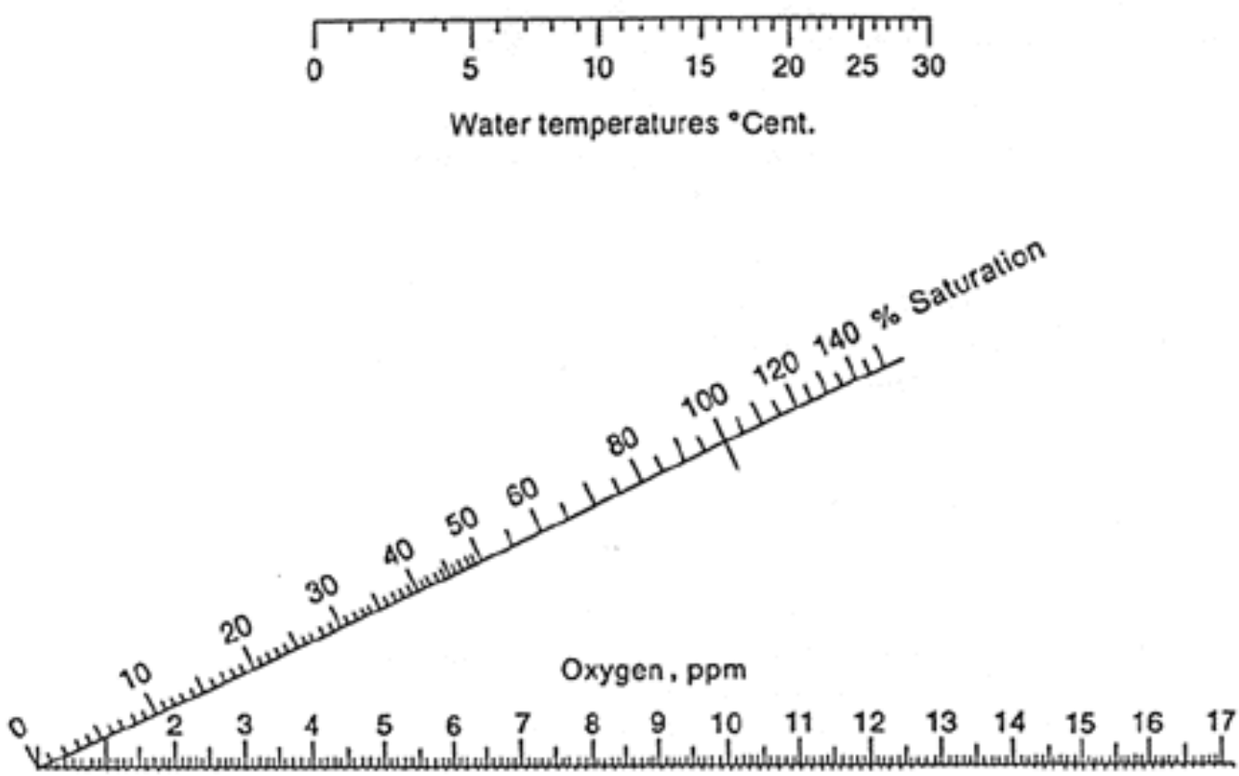


Chart Source: http://waterontheweb.org/under/waterquality/oxygen.html

CORE ID# Date, Location, Town/Village	NAME	DATE	LOCATION	GROUP # (if applicable)
INFO ABOUT CORING SITE:	**TIME**	**LATITUDE**	**LONGITUDE**	**WATER DEPTH**

CORE LENGTH: _____ **cm**

	Yes	No	Descriptors - Please note additional observations
H_2S smell			H_2S smells of rotten eggs, suggesting anaerobic bacteria
Oil			Oil creates a slight smell, a slickness and a sheen
Oxidized top*			*Oxidation (reaction with oxygen) creates a distinctly lighter layer of sediment.
Length of Oxidized Top (			_____cm

	Absent	Rare	Common	Abundant	Additional Comments
Clay					Very fine material, rich dense feel, pills when rolled - grey color
Mud					Smooth feel on fingers, often slick/ wet - brown color
Sand					Gritty feeling between fingers - variable color
Gravel					Pea sized pieces of stone - variabe color
Pebbles					Pieces of stone larger than pea - variable color
Leaves					
Wood					
Shells Oysters (dead/alive?)					
Shells mussels (except Zebra Mussels)					
Shells Zebra mussels					
Macroinvertebrates					
Living vegetation					
Brick					
Coal					
Slag					Industrial byproduct - chunky, light, pocketed & air filled

IF BAGGED, RECORD THE CORE ID # ON THE CORE COLLECTION BAG

Sketch of your core below with measurements for each section & total core:

<--TOP BOTTOM-->

form updated 09/24/2021

DITL Fish and Macroinvertebrates Name_____Date_____ Location_____

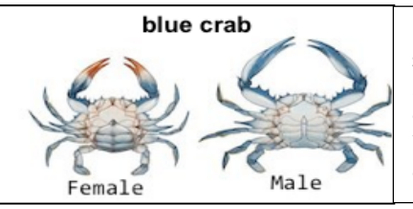
1. FISH & MACROINVERTEBRATES:

FISHING METHOD (Select all that apply): Seine:___ Traps:___ Rod & Reel:___ Electro-Shocking:___ Trawl:___ Kick Net:___ Eel Mop:_____ DID NOT FISH:___ OYSTER CAGE___ Other: (Explain)_____

FISHING #1 TIME:_____	**FISHING #2 TIME:_____**	**FISHING #3 TIME:_____**
FISHING #4 TIME:_____	**FISHING #5 TIME:_____**	**FISHING #6 TIME:_____**
FISHING #7 TIME:_____	**FISHING #8 TIME:_____**	**FISHING #9 TIME:_____**

FISH SPECIES TOTAL:	**# INDIVIDUALS:**	**LARGEST SIZE**	**SMALLEST SIZE**
1. _____	_____	_____cm	_____cm
2. _____	_____	_____cm	_____cm
3. _____	_____	_____cm	_____cm
4. _____	_____	_____cm	_____cm
5. _____	_____	_____cm	_____cm
6. _____	_____	_____cm	_____cm
7. _____	_____	_____cm	_____cm
8. _____	_____	_____cm	_____cm
9. _____	_____	_____cm	_____cm

Please take photos of the fish and send them to us for ID. This image of the Atlantic Silverside is the format to take fish pictures.
FULL BODY + HEAD TO THE LEFT



Identify crab species: Blue vs. Mud vs. Asian etc. If possible, include the sex of the crabs M/F.

MACROINVERTEBRATE SPECIES TOTAL:	**# INDIVIDUALS:**	**LARGEST /SMALLEST SIZE**	**M / F**
1. _____	_____	_____cm _____cm	M / F
2. _____	_____	_____cm _____cm	M / F
3. _____	_____	_____cm _____cm	M / F
4. _____	_____	_____cm _____cm	M / F
5. _____	_____	_____cm _____cm	M / F
6. _____	_____	_____cm _____cm	M / F
7. _____	_____	_____cm _____cm	M / F
8. _____	_____	_____cm _____cm	M / F
9. _____	_____	_____cm _____cm	M / F

CATCH PER UNIT EFFORT: *CPUE= Catch of a seine event/ [Net Length (m) X Length of Pull (m)]*

Time: _____ Catch Total: _____ Net Length (m): _____ Length of Pull: _____ Computed CPUE: _____

DITL JOURNALING Name_____ Date_____ Location_____

JOURNALING– *How do we learn about the environment?* ***WE OBSERVE!***
The power of observation plays an important role in science and Earth systems. Direct observation and careful description helps us compare species, habitats, and different geographical regions.

Things to record can begin with the following...

1. Close your eyes and listen to the environment: What can you hear? What do you smell? What does the weather feel like (i.e. humid, dry, cold, wet, windy)?
2. Open your eyes: What do you see that surprises you? Describe your surroundings.
3. What do you think might have affected your data collection today?
4. What do you still wonder about?

Hudson River Journal Entry:

By: