

**Information about these data sheets**

Last updated April 2019 (RVH)

Designed for use by Coastal Monitoring Fish and Invertebrate Field Crews

Designed to be printed, then photocopied double-sided onto waterproof paper

Form Site-Side 2 is a Word file, CM-fldchklist-Ver5

Two copies of the Invert-WQ sheet should be printed to be photocopied back to back to allow for 4 zones per s

One double-sided fish sheet will be needed PER NET, so print MANY of these forms

Crews only need a couple of copies of the codes-defs and Veg-list sheet (print these back to back and then lan

**Notes for use:**

One copy of the site sheet (both sides) should be filled out per site.

Use the checklist on the back to ensure everything gets done at a site.

Water quality can be put on EITHER the invert sheet or the fish sheet (no need to duplicate).

Check boxes allow indication of which sheet is used for WQ. This allows crew flexibility

See the Fish and Invertebrate SOP for the detailed instructions on sampling sites.

**Site Overview**

**Datasheet version: 3**

Site ID:	Site name (optional):	Crew code: Crew chief name:	Sampling type: New Finishing incomplete site
Sample Date:			

**Shoreline**

Shoreline Structure	% of site	Landcover near shore	% of site	Photo #s	
1. Sand Beach		1. Low Density Resid.			<b>GPS Unit No.:</b> _____  Boat launch waypoint: _____  Boat launch lat: _____ Boat launch long: _____  <b>Camera ID:</b> _____
2. Rocky Shoreline		2. High Density Resid.			
3. Cliff		3. Commercial/Indust			
4. RipRap		4. Ag			
5. Vegetated Bank		5. Upland forest			
6. Muddy Bank		6. Forested wetland			
7. Marsh		7. Marsh			
8. Other		8. Stream			
		9. Other			
		Can't see land (e.g., cliff, hill)			

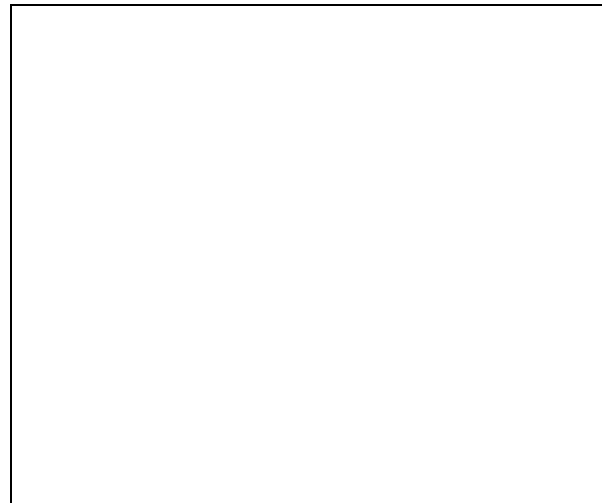
**Site morphometry & connectivity**

- Braiding Index (riverine wtland only; select only one)
- 0 channelized river
  - 1 unchannelized river, no meanders
  - 2 moderate meanders, no braiding
  - 3 multiple channels; no permanent vegetation
  - 4 multiple channels with permanent vegetation

- Hydrologic connection to lake (select only one)
- 0 strictly riverine connection to lake
  - 1 fully exposed to deep water portion of lake
  - 2 fully exposed, but partially protected from direct wave action (e.g., submerged bar)
  - 3 partially protected by sand bar, reef; opening is a large river
  - 4 partially protected by sand bar, reef; opening is a small stream
  - 5 fully separated from lake, but seasonal inundation possible
  - 6 fully separated from lake by permanent sand bar, dune, dyke (why sample?)

- Water level (select as many as necessary)
- 1 Water level stabilized by dyke (why sample?)
  - 2 Hydrology influenced by culvert, road
  - 3 Evidence of recent water level change (e.g., artificial dyke pumping)
  - 4 Evidence of long-term water level change (lake level)
  - 5 Weather-related current (onshore wind inducing seiche)
  - 6 Water level change not observed
- WL comment:

Sketch cross-section of riverine sites



**Habitat Structure**

Habitat Types (at scale of the entire wetland polygon)		(circle all present)
riprap	shallow emergent (shrubby)	shallow emergent (herbaceous)
bedrock	floating leaf	submergent
boulder	open water	undercut bank
cobble	riverine / erosional	riverine / depositional
sand	wet meadow	muddy / unvegetated shoreline
organic detritus	island	hummock
muck		bog mat

**Vegetation Zone Structure (choose only one)**

- 1 no vegetation
- 2 zones by depth
- 3 uniform distribution (e.g., single-species stand or even distribution of taxa all mixed together)
- 4 patchwork mosaic (e.g., patches of cattail, bulrush, SAV, etc)

**Disturbance (circle all present in site or within 250 m of site)**

RipRap	Sewage Discharge	Water Diversion	Boat channels (#):
Dredging (#)	Industrial Discharge	Channelization	Mowing/veg removal (% of site):
Marina	Rec. docks (#):	Ship docks (#):	Shoreline Modification (describe below)

Shoreline modifications (describe):

Recreational activities: swimming sailing fishing motor-boating PWC

Pollution: Public Litter Commercial Refuse Large Equipment Petroleum Household Appliances Sewege

Evidence and location of other disturbance (incl. natural disturbance such as beaver, carp, muskrat) :

**Site not sampleable for bugs or fish because...**

Acceptable reasons: no access, wetland no longer exists, water too deep/shallow, vegetation too dense (name it). Please describe below.

Version 2

Site ID:

Site Name:

Date:

<b>Pre-launch Checklist:</b> <input type="checkbox"/> Calibrate meters _____ (signature) <input type="checkbox"/> Notify DNR, others for sampling permission <input type="checkbox"/> Nets intact, no holes	<input type="checkbox"/> Download GPS points <input type="checkbox"/> Download site information <input type="checkbox"/> Upload GPS points to NRRI <input type="checkbox"/> Update site information in site database
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**Crew names:**

**Field crew chief:**

**Weather (air temp, % cloud cover, wind (onshore, offshore, alongshore):**

**Past 24 hr weather notes:**

**Seiche evidence (onshore, offshore, none):**

**Important reminders about this site:**

Site characterization form	Invertebrate forms	Fish forms	Water Quality
<input type="checkbox"/> Photos of site <input type="checkbox"/> Sketch of riverine site <input type="checkbox"/> Boat launch GPS waypoint	Zones sampled (list): <input type="checkbox"/> Zone: <input type="checkbox"/> Zone: <input type="checkbox"/> Zone: <input type="checkbox"/> Zone:  <input type="checkbox"/> Samples labeled <input type="checkbox"/> Sediment characterization <input type="checkbox"/> Water depth	Number of nets per zone: _____ Zone: _____ Zone: _____ Zone: _____ Zone:  <input type="checkbox"/> Fish length & anomalies <input type="checkbox"/> Unidentified fish preserved & labeled	Zones sampled (list): <input type="checkbox"/> Zone: <input type="checkbox"/> Zone: <input type="checkbox"/> Zone: <input type="checkbox"/> Zone:  <i>In Situ</i> WQ samples by: <input type="checkbox"/> Zone <input type="checkbox"/> Replicate

Overall site info	Invertebrate Habitat	Fyke net habitat	
<input type="checkbox"/> Shoreline & landcover <input type="checkbox"/> Site morphometry/hydrology <input type="checkbox"/> Habitat & vegetation patches <input type="checkbox"/> Disturbance and pollution <input type="checkbox"/> River cross-section sketch	<input type="checkbox"/> Plant quadrats <input type="checkbox"/> Secchi depth/turbidity tube <input type="checkbox"/> Sediment characterization <input type="checkbox"/>	<input type="checkbox"/> Plant quadrats <input type="checkbox"/> Secchi depth/turbidity tube <input type="checkbox"/> Sediment characterization <input type="checkbox"/>	<input type="checkbox"/>

**Notes:** List broken equipment, supplies needed, notes for the next crew

I verify that the datasheets for this site are complete and accurate: \_\_\_\_\_ (field crew chief signature)

**Macroinvertebrate / Water Quality Field Data Sheet**

Crew code: \_\_\_\_\_

Site ID: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Sheet \_\_\_\_\_ of \_\_\_\_\_ for site

Crew leader: \_\_\_\_\_  
 Signature: \_\_\_\_\_

Finishing incomplete site (check)

Zone name (veg type)						
Start/end time						
Zone contiguous or patches?						
Zone or patch size (m x m)						
Photos of zone						

Replicate Number	1	2	3	1	2	3
Latitude						
Longitude						
Waypoint ID						
Depth (m)						
Direction & dist to depth 0						
Quadrat photo #'s						
<b>Coverage at water surface (sum to 100%)</b>						
% Emergent						
dominant sp. or gen.						
% Floating leaved						
dominant sp. or gen.						
% SAV floating at the surface						
dominant sp. or gen.						
% Floating filamentous algae						
% Open water						
<b>Coverage at sediment surface (sum to 100%)</b>						
% Standing emergent stems (living or dead)						
dominant sp. or gen.						
% SAV						
dominant sp. or gen.						
% Coarse detritus (lying on bottom)						
% Filamentous algae						
% Bare sed. (no veg or detritus)						
Check box if unable to assess:						
Reason for not assessing:						
Organics Depth (cm)						
Substrate texture (dom/sub)						
Sample for % organic sed						
Number of 1m net sweeps						
Person-minutes picking						
Number of organisms						
Number of vials per rep						

**SEE FISH FORM FOR WQ DATA (CHECK)**

In situ water quality	1	2	3	1	2	3
Dup. WQ (indicate rep)						
<b>Secchi tube (cm)</b>						
<b>Temperature (°C)</b>						
<b>Specific cond. (µS cm-1)</b>						
<b>DO (% Saturation)</b>						
<b>DO (mg/L)</b>						
<b>pH</b>						
WQ meter data file ID						
Tot. Diss. Solids (g L <sup>-1</sup> )†						
Turbidity (NTU)†						
Redox pot. (mv)†						
In situ chloro. a (µg/L)†						
<b>Total Alk. (mg CaCO<sub>3</sub> L<sup>-1</sup>)</b>						
<b>Pheno. Alk. (mg CaCO<sub>3</sub> L<sup>-1</sup>)</b>						

Sample volume prepped for storage	1	2	3	1	2	3
Soluble reactive P						
NH <sub>4</sub>						
NO <sub>3</sub>						
Total P†						
Total N†						
Other: _____						
Chlorophyll filter (y/n)						

†=optional parameters

**Macroinvertebrate / Water Quality Field Data Sheet**

Crew code: \_\_\_\_\_

Site ID: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Sheet \_\_\_\_\_ of \_\_\_\_\_ for site

Crew leader: \_\_\_\_\_  
 Signature: \_\_\_\_\_

Finishing incomplete site (check)

Zone name (veg type)						
Start/end time						
Zone contiguous or patches?						
Zone or patch size (m x m)						
Photos of zone						

Replicate Number	1	2	3	1	2	3
Latitude						
Longitude						
Waypoint ID						
Depth (m)						
Direction & dist to depth 0						
Quadrat photo #'s						
<b>Coverage at water surface (sum to 100%)</b>						
% Emergent						
dominant sp. or gen.						
% Floating leaved						
dominant sp. or gen.						
% SAV floating at the surface						
dominant sp. or gen.						
% Floating filamentous algae						
% Open water						
<b>Coverage at sediment surface (sum to 100%)</b>						
% Standing emergent stems (living or dead)						
dominant sp. or gen.						
% SAV						
dominant sp. or gen.						
% Coarse detritus (lying on bottom)						
% Filamentous algae						
% Bare sed. (no veg or detritus)						
Check box if unable to assess:						
Reason for not assessing:						
Organics Depth (cm)						
Substrate texture (dom/sub)						
Sample for % organic sed						
Number of 1m net sweeps						
Person-minutes picking						
Number of organisms						
Number of vials per rep						

**SEE FISH FORM FOR WQ DATA (CHECK)**

<i>In situ</i> water quality	1	2	3	1	2	3
Dup. WQ (indicate rep)						
<b>Secchi tube (cm)</b>						
<b>Temperature (°C)</b>						
<b>Specific cond. (µS cm-1)</b>						
<b>DO (% Saturation)</b>						
<b>DO (mg/L)</b>						
<b>pH</b>						
WQ meter data file ID						
Tot. Diss. Solids (g L <sup>-1</sup> )†						
Turbidity (NTU)†						
Redox pot. (mv)†						
<i>In situ</i> chloro. a (µg/L)†						
<b>Total Alk. (mg CaCO<sub>3</sub> L<sup>-1</sup>)</b>						
<b>Pheno. Alk. (mg CaCO<sub>3</sub> L<sup>-1</sup>)</b>						

Sample volume prepped for storage						
Soluble reactive P						
NH <sub>4</sub>						
NO <sub>3</sub>						
Total P†						
Total N†						
Other: _____						
Chlorophyll filter (y/n)						

†=optional parameters

Site ID: \_\_\_\_\_ Sampling: initial reset Orientation to zone (parallel/perp/angle): \_\_\_\_\_ Crew code: \_\_\_\_\_

Site name (opt): \_\_\_\_\_ Net-rep #: \_\_\_\_\_ Date set: \_\_\_\_\_ Date ck: \_\_\_\_\_ Unkn/Vouch Jars \_\_\_\_\_

Zone name (veg type): \_\_\_\_\_ Fyke size: small large Time set: \_\_\_\_\_ Time ck: \_\_\_\_\_ Collectors: \_\_\_\_\_

Taxa (length in mm)		1	2	3	4	5	6	7	8	9	10	11	12	13	Comments
	TL														
	TL													X	
	#														Total
	TL														
	TL													X	
	#														Total
	TL														
	TL													X	
	#														Total
	TL														
	TL													X	
	#														Total
	TL														
	TL													X	
	#														Total
	TL														
	TL													X	
	#														Total
	TL														
	TL													X	
	#														Total

Anomalies: A=anchor worm B=black spot C=leeches D=deformities E=eroded fin F=fungus I=ich L=lesions N=blind P=parasites Y=popeye S=emaciated W=swirl scales T=tumor X=dead Z=other

Water depth at net frame (m):

Set Depth (m): \_\_\_\_\_

Pull Depth (m): \_\_\_\_\_

Water/Weather/Wind/Net Conditions:

**Net sample efficiency** (check, and indicate any problems below):  
 Fished OK \_\_\_\_ Had Minor Problem \_\_\_\_ DID NOT FISH \_\_\_\_  
**Conditions:** Net twisted, caught, obstructed, torn open, disturbed, Other :

Taxa (length in mm)	1	2	3	4	5	6	7	8	9	10	11	12	13	Comments
TL														
TL														
#														Total
TL														
TL														
#														Total
TL														
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#														Total

General info			Vegetation/Quadrat			In situ Water Quality		
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Veg Zone:		Contig. or patch?		Coverage at water surface (sum to 100%)			Temp (C)		Meter data file ID:	
Zone or patch size (m x m):			% Emergent			Scond(uS)		Redox(mV)		
Direction & distance (m) to depth 0:			dominant sp. or gen.			DO(%)		Chl a		
Organics depth (cm):			% Floating leaved			DO(mg/L)		Pheno Alk		
GPS#	Lat:	Long:		dominant sp. or gen.			Tot Alk		Turbidity (ntu)	
GPS Unit ID:			% SAV floating at the surface			pH		TDS		
Camera ID (if fish pictures taken):			dominant sp. or gen.			Secchi Tube (cm)				
Quadrat photo #'s:			% Floating filamentous algae							

<b>Sample Vol for lab WQ:</b>	
SRP	
TP (opt)	
NO <sub>3</sub>	
NH <sub>4</sub>	
TN (opt)	
Other:	
Chlorophyll filter (y/n)	

% Open water		Substrate texture: 1 _____ 2 _____	
<b>Coverage at sediment surface (sum to 100%)</b>			
% Standing emergent stems (living or dead)			
dominant sp. or gen.			
% SAV			
dominant sp. or gen.			
% Coarse detritus (lying on bottom)			
% Filamentous algae			
% Bare sed. (no veg or detritus)			
Check box if unable to assess:			
Reason for not assessing:			

**SEE BUG FORM FOR WQ DATA**

\_\_\_\_\_ Sample for %organic sed (optional)

Notes:

## Codes for Data Sheets:

Label Protocol:	Site ID (from map)	Date (month DD, YY)
	Zone name	Jar x of X (if multiple jars per sample or net)
	Rep number & net size	Crew code
	Waypoint #	Crew chief name

## Part II

### 1 Vegetation zones

**Typha:** Typha (cattail)

**Lily:** Nuphar-Nyphaea (water lily, combined)

**In Schoen:** Inner (dense) Schoenoplectus (bulrush)

**Out Schoen:** Outer (sparse) Schoenoplectus (bulrush)

**Pelt-Pont:** Peltandra-Sagittaria-Pontederia (arrow-arum-arrowhead-pickerel weed)

**OW:** open water

**Sparg:** Sparganium (bur-reed)

**Mead:** Wet meadow

**SAV:** Submersed aquatic vegetation

**Bog:** Floating bog mat

### 2 Substrate Composition

*Choose dominant, subdominant, sub-sub dominant (if necessary)*

#### *Mineral substrates*

**CL:** Clay (sticky)

**SL:** Silt (silky smooth)

**SD:** Sand (gritty, grainy)

**GR:** Gravel (4 mm to quarter)

**PB:** Pebble (quarter to fist-size)

**CB:** Cobble (fist-size to basketball)

**BL:** Boulder (> basketball to small car size)

#### *Organic substrates*

**MU:** Muck (black ooze, plant particles not discernable)

**PT:** Peat (thick mat of partially-broken-down plant particles of bog plants)

**DT:** Detritus (plant remains from previous winter, typically reeds, cattails)

**WD:** Wood (write note if thick wood chips)



## Common Vegetation Taxa

Genus	Common	Genus	Common
<i>Alisma</i>	Water Plantain	<i>Phalaris</i>	Canary Reed Grass
<i>Bidens beckii</i>	Water Marigold	<i>Phragmites</i>	Cane Grass
<i>Brasenia schreberei</i>	Water Shield	<i>Pistia</i>	Water Lettuce
<i>Calla</i>	Water Arum	<i>Pontederia</i>	Pickerelweed
<i>Caltha</i>	Marsh Marigold	<i>Potamogeton</i>	Pond Weed
<i>Carex</i>	Sedge	<i>P. amplifolius</i>	
<i>Ceratophyllum</i>	Coon Tail	<i>P. crispus</i>	
<i>Chara</i>	Water Cabbage	<i>P. natans</i>	
<i>Eleocharis</i>	Spike Rush	<i>P. pectinatus</i>	
<i>Elodea</i>	Water weed	<i>P. richardsonii</i>	
<i>Equisetum</i>	Horse Tail Fern	<i>Ranunculus</i>	Buttercup
<i>Hippuris</i>	Water Mare's Tail	<i>Sagittaria</i>	Arrowhead
<i>Iris</i>	Iris (blue flag), yellow flag is non-native	<i>Schoenoplectus/Scirpus</i>	Bulrush
<i>Juncus</i>	Rush	<i>Sium</i>	Water Parsnip
<i>Lemna</i>	Duck Weed	<i>Sparganium sp.</i>	Bur Reed
<i>Lythrum</i>	Loosestrife (purple loosestrife is non-native)	<i>Spirodela</i>	Great Duck Weed
<i>Myriophyllum</i>	Water Milfoil	<i>Typha</i>	Cattail
<i>Najas</i>	Bushy Pondweed	<i>Utricularia</i>	Bladderwort
<i>Nelumbo</i>	Lotus lily	<i>Vallisneria</i>	Water Celery
<i>Nuphar</i>	Water Lily	<i>Zizania</i>	Wild Rice
<i>Nymphaea</i>	Pond Lily		

## Fyke net problem codes:

A: Depth: A1 too deep; A2 too shallow

B: Sediment: B1 unconsolidated; B2 rocky; B3 bedrock; B4 unsafe bog

D: Nets damaged or missing

H: No habitat available

M: Mechanical problems: M1 vehicle; M2 boat

R: Rough surf

S: Size of site too small

W: Weather not permitting

O: Other, please specify

P: Permission lacking

## Water quality problem codes:

A: Depth: A2 too shallow

B: Sediment: B2 rocky; B3 bedrock; B4 unsafe bog

M: Mechanical problems: M2 boat; M3 meters

O: Other; please specify

W: Weather not permitting

## Invertebrate problem codes:

A: Depth: A2 too shallow

B: Sediment: B4 unsafe bog

N: Not done; explain on data sheet

O: Other; please specify

W: Weather not permitting