

# ASSESSMENT OF UNIONID REFUGES DATA COLLECTION SHEET

## Site Information

Name of the bay (place) _____	Site number _____
_____	County _____
GPS (decimal degrees) _____ N	State _____
(WGS 84 datum) _____ W	Date _____
Nearest Road _____	Time started _____
Nearest city _____	Time finished _____
Prepared by (name(s), institution) _____	
_____	Initials _____

## Environmental parameters

<b>Current threats (visual):</b>	pollution _____
sediment disturbance (filling, grading, removal of vegetation, building construction etc)	_____
_____	watershed development _____
_____	_____
<b>Macrophyte overgrowth (visual):</b>	dominant species _____
% submerged _____	_____
% emergent _____	_____
<b>Visibility:</b> _____ poor (high turbidity or easily roiling sediments obstructing the view)	_____ medium (a few cm)
	_____ up to the bottom (excellent for visual search)
<b>Density of dreissenids:</b>	
_____ absent _____ low (few mussels/aggregations)	_____ medium (many mussels/aggregations)
_____ high (all suitable substrates covered by dreissenids)	

Refuge \_\_\_\_\_  
Site # \_\_\_\_\_  
Prepared by \_\_\_\_\_

**Abiotic data** (record in at least 3 points per sampling site):

<i>Parameter</i>	<i>Reading 1</i>	<i>Reading 2</i>	<i>Reading 3</i>
<b>Depths range</b> (m)			
<b>Depth of soft sediments</b> (measure with a stick, cm)			
<b>Substrate (%)</b> :			
bedrock, large boulders (>45 cm)			
boulders (>25 - 45 cm)			
cobble (>6 - 25 cm)			
gravel (>6 - 60 mm)			
sand (0.06 - 6 mm)			
mud/silt (<0.06 mm)			
clay			
<b>Water chemistry:</b>			
Probe brand/model or test strips types			
water temperature (°C)			
pH			
Alkalinity (units)			
total hardness (ppm)			
Nitrates/Nitrite (ppm)			
Phosphates (ppm)			
Turbidity (cm)			

**Time Search** (2 man hours on each sampling site)

<b>Time search efforts:</b>	<b>GPS coordinates of time search area</b> (4 corners of 1 hectare [100m x 100m] site)
_____ time spent	_____ N _____ W
_____ number of people searched	_____ N _____ W
<b>Search:</b> _____ visual or _____ tactile	_____ N _____ W
<b>Range of depths searched:</b>	_____ N _____ W
_____ minimal _____ maximal	_____ N _____ W
Searched by: _____ wading _____ snorkel	Search area marked on the map _____
_____ diving (SCUBA)	

Refuge \_\_\_\_\_  
 Site # \_\_\_\_\_  
 Prepared by \_\_\_\_\_

**Shells collected:**

Species /condition (recently dead - RD, long dead - LD, subfossil - SF)

---

---

---

---

---

Unionids outside of designated site (nearby – in addition to what was found inside):

Species/ condition (recently dead - RD, long dead - LD, subfossil - SF)

---

---

---

---

---

---

---

---

**Juvenile unionids: (from raking)**

Raking area: est. transect length \_\_\_\_\_ x rake width \_\_\_\_\_ = \_\_\_\_\_ m<sup>2</sup>

\_\_\_\_\_ live molluscs found

Species/length (mm) (use Live Unionids Tally Sheet if many) \_\_\_\_\_

---

---

---

---

---

**Total live mussels collected:** \_\_\_\_\_

**Total shells collected:** \_\_\_\_\_

**Total species collected:** \_\_\_\_\_ live; \_\_\_\_\_ live + dead

Refuge \_\_\_\_\_  
Site # \_\_\_\_\_  
Prepared by \_\_\_\_\_