Appendix A: Equipment & Supplies

Base Kit:

A Base Kit will be provided to the field crews for all sampling sites that they will go to. Some items are sent in the base kit as extra supplies to be used as needed.

Item	Quantity	Protocol
Antibiotic Salve	1	Fish plug
Centrifuge tube stand	1	Chlorophyll A
Centrifuge tubes (screw-top, 50-mL) (extras)	5	Chlorophyll A Periphyton
Clinometer	1	Physical Habitat
CST Berger SAL 20 Automatic Level	1	Physical Habitat
Delimiter – 12 cm^2 area	1	Periphyton
Densiometer - Convex spherical (modified with taped V)	1	Physical Habitat
D-frame Kick Net (500 µm mesh, 52" handle)	1	Benthics
Filteration flask (with silicone stopped and adapter)	1	Enterococci, Chlorophyll A, Periphyton
Fish weigh scale(s)	1	Fish plug
Fish Voucher supplies	1 pack	Fish Voucher
Foil squares (aluminum, 3x6")	1 pack	Chlorophyll A Periphyton
Gloves (nitrile)	1 box	General
Graduated cylinder (25 mL)	1	Periphyton
Graduated cylinder (250 mL)	1	Chlorophyll A, Periphyton
HDPE bottle (1 L, white, wide-mouth) (extras)	12	Benthics, Fish Vouchers
HDPE bottle (500 mL, white, wide-mouth) with graduations	1	Periphyton
Laboratory pipette bulb	1	Fish Plug
Microcentrifuge tubes containing glass beads (extras or for filter blanks)	5	Enterococci
Nalgene beaker (3 L)	1	Water Chemistry
NRSA 2013-2014 Quick Reference Guide	1	General
NRSA 2013-2014 Field Operations Manual	1	General
Petri dishes 60x15 (disposable)	10	Filter Storage
Pipette and pipette bulb (2 mL)	2	Periphyton
Poly bottle (2 L, brown)	1	Chlorophyll A
Rubbermaid Roughneck tote (3 gallon)	1	General
Sieve bucket (500 µm)	1	Benthics
Sounding rod (PVC 3 m , marked in 0.1 m increments)	1	Physical Habitat
Sodium Thiosulfate Tablets	1 pack	Enterococci
Stauffer, et al 2001 - Photovouchering guidelines	1	Fish Vouchers
Surveyor's telescoping leveling rod (rectangular, metric scale, 7.5m extended)	1	Physical Habitat
Syringe (60 cc, with tip removed and tubing)	1	Periphyton
Tape dispenser & packing tape rolls	1	Shipping
Tape strips	2 packs	General
Toothbrush (stiff-bristle, with handle bent at 90˚ angle)	1	Periphyton
Tripod for level	1	Physical Habitat

Utility funnel (15 cm diameter)	1	Periphyton
Vacuum hand pump and clear plastic tubing	1	Enterococci Chlorophyll A Periphyton
Wash bottles (1 L Nalgene) – 1 DI, 1 river water	2	General
Whatman 47 mm polycarbonate 0.4 µ filters	1 box	Enterococci
Whatman 47 mm glass fiber GF/F 0.7 µ filters	1 box	Chlorophyll A, Periphyton
Whatman 47 mm glass fiber GF/C 1.2 µ filters	1 box	Periphyton

**Items may need to be replenished by field crews during field season*
† Some items are sent in base kit as stock or extra supplies to be used as needed.

Site Kit

A **site kit** will be provided to the field crews for each sampling site. Please submit an electronic request form **well in advance** of field sampling. Kits must be requested at least three weeks before sampling is to take place. Each site kit will also include necessary coolers and shipping supplies for all samples collected. Prior to sampling, inspect each site kit to ensure all supplies are included. Some items may not be used at all sites and should be held until the end of the field season and shipped back. These site kits include:

Item	Quantity	Protocol
Centrifuge tubes (screw-top, 50-mL)	4	Chlorophyll A Periphyton
Cooler Liner	1	Shipping
Cubitainer (4 L)	1	Water Chemistry
Dangerous Goods label (Class 9, for dry ice shipments)	1	Shipping
FedEx airbills (overnight, non-chilled batch, frozen batch, data)	3	Shipping
Fish Tissue Plug Kit Sterile scalpel Sterile biopsy punch Sterile disposable forceps Sterile 20 mL glass scintillation vial	1 1 1 1 1	Fish Tissue Plugs
Forceps (sterile disposable)	2	Enterococci Chlorophyll A Periphyton
HDPE bottle (1 L, white, wide-mouth)	2	Benthics
HDPE bottle (1 L, white, wide-mouth)	1	Fish Voucher
HDPE bottle (500 mL, white, wide-mouth)	1	Microcystin
HDPE bottle (250 mL, sterile)	1	Enterococci
Microcentrifuge tubes with glass beads (in padded bag)	2	Enterococci
Netting Bags	2	Fish
Sterile filtration unit (250 mL filter funnel, cap, and filter holder)	1	Enterococci Chlorophyll A Periphyton
Sterile phosphate buffered saline (PBS)	1	Enterococci
Zip ties	2	Shipping

Whole Fish Tissue Kit

A **whole fish tissue kit** will be provided to the field crews for selected sampling sites (separately from site kits). Please submit an electronic request form **well in advance** of field sampling. Kits must be requested at least three weeks before sampling is to take place. Prior to sampling, inspect each site kit to ensure all supplies are included. These site kits include:

Item	Quantity
Aluminum foil (solvent-rinsed and oven dried)	5 packs
Cable ties	24
Cooler	1
Dry Ice Information Sheet	1
Dry ice Shipping Label	1
Dry Ice Vendor Location List	1
Dry Ice Vendor Map	1
FedEx airbill (Pre-addressed)	1
Frequently Asked Questions handout	1
Heavy-duty food grade polyethylene tubing	1 roll
Large plastic composite bag	1
Nitrile gloves	10
NRSA 2013/14 Fish Tissue Site List	1
Sampling Procedures handout	1

General Equipment

This equipment will need to be supplied by the field crew.

Item	Quantity	Protocol
Barometer or elevation chart to use for calibration		Calibration
Batteries		General
Binoculars	1	Physical Habitat
Bleach (1-10 %, or bleach alternative)		Cleaning
Bucket	1	Benthics
Calibration cups and standards for multi-probe unit		Water Chemistry
Cell phone, 2-way radios, and/or walkie-talkies		General
Chest waders	2 pair	Benthics Physical Habitat
Clear tape strips (for covering labels)		General
Clipboard	2	General
Compass (Bearing – backpacking type)	1	Physical Habitat
Current velocity meter, prove, and operating manual	1	Physical Habitat
Digital camera with extra memory card & battery	1	General
Dip Nets (non-conducting, ¼" mesh)	2	Fish Collection
Dry Ice		
Electrical tape		General
Electrofishing equipment (boat, barge, and/or backpack units, including variable voltage pulsator unit, wiring cables, generator, electrodes, dip nets, livewell and all safety equipment)	1	Fish Collection
Electronic data capture devices (tablet/phone/computer) with NARS App and extra battery pack (if needed)	1-2	General
Ethanol (95%)		Sample
Field gear (e.g., protective clothing, sunscreen, insect repellent, hat,		General

water, food, backpack, cell phone)		
Fisherman's vest (with lots of pockets and snap fittings)		General
Formalin (buffered, 10%)		Preserve Samples
GPS unit (with manual, reference card, extra battery)	1	Site Verification Physical Habitat
Knife or scissors	1	General
Laser rangefinder (400 ft. distance range)	1	Physical Habitat
Linesman gloves		Fish Collection
Measuring board (millimeter scale)		Fish Collection
Measuring tape with reel (50- 100 m)	1	Physical Habitat
Meter stick (for bank angle measurements)	1	Physical Habitat
Multi parameter meter with pH, DO, temp, and conductivity probes)	1	Water Chemistry
Neutrally buolant object (e.g., plastic golf ball, small rubber ball, stick)		Physical Habitat
Pen, Pencils (#2, for data forms), Permanent marker (fine tip, for labels)	1	General
Plastic Bags	2	Sample Storage
Plastic bucket (or similar container) with graduations (optional)	1	General
Portable Weir with 60° "V" notch (optional) and plastic sheeting	1	Discharge
QC check solution (4 L)	1	Water Chemistry
Sampling permits and/or access permission letters (if required)		Site Evaluation
Scalpel for slitting open large fish before preservation		Fish Collection
Seine (10' or 20' x 6' minnow or bag seine - ¼ inch mesh) (optional)		Fish Collection
Site maps/access instructions		Site Evaluation
Small spatula, spoon, or scoop to transfer sample	1	Benthics
Surveyor's flagging tape and/or pin flags		Physical Habitat
Top-set wading rod for use with current velocity meter	1	Physical Habitat
Watch with timer or stopwatch	1	Discharge
Watchmakers' forceps	1	Benthics
Water (deionized)		General
Wet ice		Sample Storage

Boat Equipment

This is suggested boat equipment that would be supplied by the field crew.

Item
Anchor (with line)
Boat horn
Boat plug (extra)
Bow/Stern lights
Emergency Tool kit
Gas Can
Hand Bilge pump
Lifejackets (1 per person)
Motor
Oars or Paddles
Sonar Unit
Spare Prop Shear Pin
Type IV PFD (Throwable Life Saving device)

Safety Equipment

Waders
Gloves
Sun-blocking Hat
Other appropriate field clothing
Safety glasses
First aid kits
Fire extinguishers
Blankets
Cellular/satellite phones or portable radios
Anti-bacterial soap
Clean water or ethyl alcohol
Medications

Sample/Data Collection

This is a summary of the supplies that will be used in sample/data collection. Items are supplied in the Base Kit, Site Kit or by the Crew as indicated.

	Item	Quantity	Protocol
BASE KIT	12 cm^2 area delimiter (3.8 cm diameter pipe, 3 cm tall)	1	Periphyton
	Clinometer	1	Physical Habitat
	Convex spherical canopy densiometer (Lemmon Model B, modified with taped "V")	1	Physical Habitat
	D-frame Kick Net (500 µm mesh, 52" handle)	1	Benthics
	Gloves (nitrile)	2 boxes	General
	Graduated cylinder (25 mL or 50 mL)	1	Periphyton
	Graduated cylinder (250 mL)	1	Chlorophyll A
	HDPE bottle (500 mL, white, wide-mouth) with graduations	1	Periphyton
	Nalgene beaker (3 L)	1	Water Chemistry
	Poly bottle (2 L, brown)	1	Chlorophyll A
	Sieve-bucket, 500 µm mesh (U.S. std No. 35)	1	Benthics
	Sounding rod (3 m , marked in 0.1 m increments, calibrated, PVC)	1	Physical Habitat
	Surveyor's telescoping leveling rod	1	Physical Habitat
	Syringe (60 cc, tip removed and tubing)	1	Periphyton
	Toothbrush (stiff-bristle, with handle bent at 90˚ angle)	1	Periphyton
	Utility Funnel (large, 15-20 cm diameter)	1	Water Chemistry
	Wash bottle for stream water (1 L)	1	General
	Wash bottle containing deionized water (1 L)	1	General
SITE KIT	HDPE bottle (250 mL, sterile)	1	Enterococci
	Gloves (nitrile)	1 Pair	Enterococci
CREW SUPPLIED	Bearing compass (Backpacking type)	1	Physical Habitat
	Binoculars	1	Physical Habitat
	Buckets (plastic)	1	Benthics
	Current velocity meter, probe, and operating manual	1	Physical Habitat
	Dip nets (non-conducting, 1/4" mesh)	2	Fish Collection
	Electrical tape	1	General
	Electrofishing equipment (boat, barge, and/or backpack	1	Fish Collection

	units, including variable voltage pulsator unit, wiring cables, generator, electrodes, dip nets, and all safety equipment)		
	Linesman gloves		Fish Collection
	Livewell and/or buckets		Fish Collection
	Measuring board (millimeter scale)		Fish Collection
	Meter stick (for bank angle measurements)		Physical Habitat
	Minnow net for dipping small fish from live well	1	Fish Collection
	Multi-parameter water quality meter with pH, DO, temperature, and conductivity probes	1	Water Chemistry
	Neutrally buoyant object (e.g., plastic golf ball with holes, small rubber ball, stick)		Physical Habitat
	Plastic bucket (or similar container) with volume graduations (optional)	1	Discharge Measurement
	Portable Weir with 60° "V" notch (optional) and plastic sheeting to use with weir	1	Discharge Measurement
	Seine (10' or 20' x 6' minnow or bag seine with ¼ inch mesh) (optional)		
	Tape measure (in centimeters) (optional)	1	Physical Habitat
	Top-set wading rod for use with current velocity meter	1	Physical Habitat
	Watch with timer or stopwatch	1	General
	Watchmakers' forceps	1	Benthics

Sample Processing/Preservation

This is a summary of the supplies that will be used in sample processing/preservation. Items are supplied in the Base Kit, Site Kit or by the Crew as indicated.

	Item	Quantity	Protocol
BASE KIT	Aluminum foil squares (3" x 6") Petri dishes (60 x 15, disposable)	 10	Chlorophyll A Filters
	Vacuum hand pump and clear plastic tubing	1	Chlorophyll A
	Whatman 47 mm polycarbonate 0.4 micron filters	1 box	Enterococci
	Whatman 47 mm 0.7 micron GF/F glass fiber filters	1 box	Chlorophyll A
	Whatman 47 mm 1.2 micron GF/C glass fiber filters	1 box	AFDM
SITE KIT	Aluminum foil (solvent-rinsed and baked)		Whole Fish Tissue
	Plastic Bags (large)	1	Shipping
	Coolers		Storage/Shipping
	Polyethylene tubing (Heavy-duty food grade)		Whole Fish Tissue
	Sterile disposable forceps	2	Enterococci
	Sterile filtration unit (Nalgene 145/147), including filter funnel, cap, filter holder, and receiving chamber	1	Enterococci
	Sterile phosphate buffered saline (PBS) Zip tie	1 1	Enterococci Whole Fish Tissue
CREW SUPPLIED	Dry ice		Microcystin Enterococci Fish Tissue Plug Whole Fish Tissue
	Ethanol (95 %) Fish Plug implements		Benthics Fish Plug
	Formalin (buffered, 10%)		Periphyton Fish Voucher

	Knife or scissors	1	General
	Scalpel for slitting open large fish before preservation	1	Fish Collection
	Small spatula, spoon, or scoop to transfer sample	1	Benthics
	Water (deionized)	1	General
	Water (stream)	1	General
	Wet ice		Water Chemistry Chlorophyll A

Stock Solutions (provided by Sampling Crew)

SOLUTION	USE	PREPARATION
Bleach (1%)	Clean nets, other gear, and boat.	Add 40 mL bleach to 4 L distilled water.
QCS Solution*	Weekly check of meter calibration A 1:100 dilution of the standard solution (RIGHT) produces a solution with the following theoretical values: pH 6.98 Conductivity 75.3 µS/cm @ 25°C	**STANDARD SOLUTION:** KH_2PO_4 3.4022 g Na_2HPO_4 3.5490 g Deionized water 1000 mL Mix to dissolve
10% Buffered Formalin†	Preservation of periphyton ID sample and fixing Fish Vouchers	Formaldehyde (37-40%) 100 ml Distilled water 900 ml NaH_2PO_4 4.0 g Na_2HPO_4 (anhydrous) 6.5 g Mix to dissolve
95% Ethanol	Preservative for benthic invertebrate samples and fish vouchers.	No preparation needed (use stock solution as is).

** QCS or "confidence" solutions can also be purchased pre-mixed from various sources.*
† 10% Buffered Formalin can also be purchased pre-mixed from various sources

Sample Storage

This is a summary of the supplies that will be used in sample storage, i.e. the container used in shipping. These items are all provided in the site kit.

Item	Quantity	Protocol
Centrifuge tubes (screw-top, 50-mL)	4	Chlorophyll A Periphyton
Cubitainer (4 L)	1	Water Chemistry
Fish Tissue Plug vial	1	Fish Tissue Plugs
HDPE bottle (1 L, white, wide-mouth)	1-2	Benthics
HDPE bottle (1 L, white, wide-mouth)	1	Fish Voucher
HDPE bottle (500 mL, white, wide-mouth)	1	Microcystin
HDPE bottle (250 mL, sterile)	1	Enterococci
Microcentrifuge tubes containing sterile glass beads (sterile)	2	Enterococci

Packaging/Shipping

This is a summary of the supplies that will be used in the shipping of samples.

Item	Quantity	Protocol
Coolers	3	Shipping
Cooler liners (30-gal garbage bags)	3	Shipping
Dangerous Goods label (Class 9, for dry ice shipments)	1	Shipping
Dry ice (~60 lbs per site)		Shipping
FedEx airbills (overnight, batch ground, batch overnight dry ice)	3	Shipping
Packing tape	1	Shipping
Wet ice (~50 lbs per site; additional for shipping)		Shipping

Appendix B: Forms & Labels

Paper field forms and labels will be supplied by NARS IM. Please submit an electronic Supply Request Form well in advance of field sampling – indicate if you would like wadeable or boatable packets. For each site you will receive a data packet and a tracking/labels packet. Tracking forms and labels must be used together for one site. Do not mix labels from different sites. Prior to sampling, inspect each packet to ensure all forms are included.

The NARS Mobile App is also available for download on the NARS Sharefile if you would like to use tablets or computers to record field data. Field crews will need to request tracking/labels packets through the electronic Supply Request Form as well.

Item	Quantity	Protocol
Field forms packet (wadeable):		General
Verification (front & back)	1	
Field Measurement	1	
Sample Collection (front & back)	1	
Fish Gear & Sampling Info (front & back)	1	
Fish Collection	1	
Whole Fish Tissue Collection (used at selected sites)	1	
Physical Habitat: Channel/Riparian Cross-section – Wadeable Only	11+	
Physical Habitat: Thalweg Profile & Woody Debris – Wadeable Only	11+	
Physical Habitat: Slope & Bearing – Wadeable Only	1	
Torrent Evidence Assessment	1	
Discharge – Wadeable Only	1	
Channel Constraint	1	
Assessment	1	
Field forms packet (boatable):		General
Verification (front & back)	1	
Field Measurement	1	
Sample Collection (front & back)	1	
Fish Gear & Sampling Info (front & back)	1	
Fish Collection	1	
Whole Fish Tissue Collection (used at selected sites)	1	
Physical Habitat: Channel/Riparian Transect – Boatable Only	10	
Physical Habitat: Thalweg Profile – Boatable Only	10	
Torrent Evidence Assessment	1	
Channel Constraint	1	
Assessment	1	
Tracking forms & labels packet (all sites):		Shipping
Tracking: Site and Sample Status/Water Chemistry Lab Tracking	1	
Tracking: Batch Samples – Overnight (dry ice)	1	
Tracking: Batch Samples – Ground (no ice)	1	
Tracking: Whole Fish Tissue – Overnight (dry ice, batch samples)	1	
Tracking: Fish Tissue Plugs – Overnight (dry ice, batch samples)	1	
Tracking: Packs	1	
Labels (for samples)	1	
Other forms (provided by NARS IM as needed):		General
Fish Collection (additional)	10	
Seining Information (optional, if needed)	3	
Other forms (sent as update, if needed, by NARS IM after data packet received): Fish Identification & Count	1	Fish

NRSA 2013/14 VERIFICATION (Front)

Reviewed by (initial): ____

Site ID: _____ Visit: O 1 O 2 Date: ____ / ____ / ____

Site Name: _____ State of Site Location: _____ Field Crew: _____

STREAM/RIVER VERIFICATION INFORMATION

Stream/River verified by (Mark all that apply): O GPS O Local Contact O Signs O Roads O Topo. Map

O Other (Describe Here): _____

Coordinates	Latitude	Longitude	Type of GPS Fix	Elevation at transect A
GPS Decimal Degrees NAD 83	____ . ____	— ____ . ____	O 2D O 3D	____ O ft O m

Location: O X-Site (wadeable) O Transect A (non-wadeable)

DID YOU SAMPLE THIS SITE?

O YES If Yes, check one below

SAMPLEABLE (Choose method used)

- O Wadeable - Continuous water, greater than 50% wadeable
- O Boatable
- O Partial - Sampled by wading (>50% of reach sampled). Explain below.
- O Partial - Sampled by boat (>50% of reach sampled). Explain below.
- O Wadeable Interrupted - Not continuous water along reach
- O Boatable Interrupted - Not continuous water along reach
- O Altered - Stream/River Channel Present but differs from Map

ADDITIONAL SITE CHARACTERISTICS

O Tidally Influenced O Blackwater O Not Applicable

O NO If No, check one below

NON-SAMPLEABLE-PERMANENT

- O Dry - Visited
- O Dry - Not visited
- O Wetland (No Definable Channel)
- O Map Error (No evidence channel/waterbody ever present)
- O Impounded (> 7 day residence time)
- O Tidal (Exceeds salinity threshold)

NON-SAMPLEABLE-TEMPORARY

- O Other (explain in comments)
- O Not boatable - Need a different crew - Reschedule for this year
- O Not wadeable - Need a different crew - Reschedule for this year

NO ACCESS

- O Other (Explain in comments)
- O Access Permission Denied
- O Permanently Inaccessible (Unable/Unsafe to Reach Site)
- O Temporarily Inaccessible-Fire, etc. - Reschedule for next year

GENERAL COMMENTS

DIRECTIONS TO SITE

04/08/2013 2013 Verification 5409334985

Reviewed by (initial): _____

NRSA 2013/14 VERIFICATION (Back)

Site ID: _____ Visit: ○ 1 ○ 2 Date: ____ / ____ / ____

STREAM/RIVER REACH DETERMINATION

Channel Width Used to Define Reach (m)	DISTANCE (m) FROM X-SITE		Total Reach Length Intended (m):	Comment:
	Upstream Length:	Downstream Length:		

SKETCH MAP

Arrow Indicates North; Mark site L=Launch X=Index T= Take Out
NOTE: If an outline map is attached here, use a continuous strip of clear tape across the top edge. You can also attach a separate sheet with the outline map on it. For boatable sites you can attach topo map with reach, X-site and transect locations marked.

PERSONNEL

Crew Leader:		Name:	
Fish Taxonomist:		Name:	
Name:		Name:	
Name:		Name:	

04/08/2013 2013 Verification 4426334983

NRSA 2013/14 FIELD MEASUREMENT

Reviewed by (initial): _____

Site ID: _____ Date: ___ / ___ / _____

CALIBRATION INFORMATION

Instrument manufacturer and model: _____

Instrument ID number: _____ Operator: _____

TEMPERATURE	Thermometer Reading (°C)	Sensor Reading (°C)	Comments			
	___.___	___.___				
DO	Elevation (m)	OR Barometric Pressure (mm Hg)	Calibration Value		Displayed Value	Flag
	_____	_____	___.___ O mg/L O %		___.___ O mg/L O %	
pH	Cal. STD 1 Description	Cal. STD 1 Value	Cal. STD 2 Description		Cal. STD 2 Value	
		___.___			___.___	
	Calibration Verified with Quality Control Sample (QCS)					
	QCS Description	QCS True	QCS Measured		Flag	
		___.___	___.___			
CONDUCTIVITY	Cal. STD 1 Description	Cal. STD 1 Value	Cal. STD 2 Description		Cal. STD 2 Value	
	Calibration Verified with Quality Control Sample (QCS)					
	QCS Description	QCS True (µS/cm @25°C)	QCS Measured (µS/cm @25°C)		Flag	

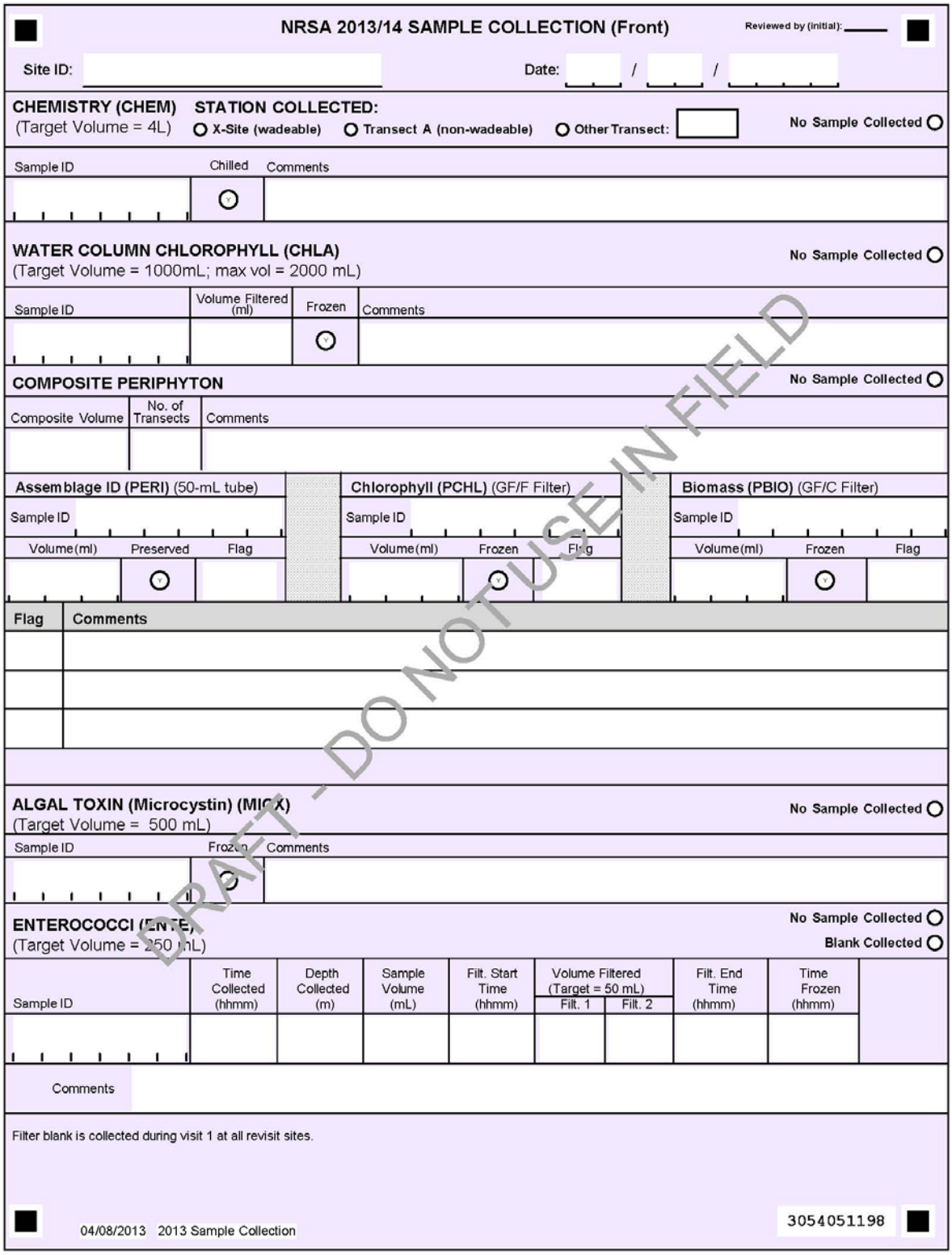
Flag	Comments

Flag codes: K = No measurement or observation made; U = Suspect measurement or observation; F1, F2, etc. = misc. flags assigned by field crew. Explain all flags in comment sections.

FIELD MEASUREMENT O X-Site (wadeable) O Transect A (non-wadeable) O Other Transect: ___ Comments

Time of Day (hh:mm) ___:___	
DO(mg/L) XX.X ___.___	
Temp. (°C) XX.X ___.___	
pH XX.XX ___.___	
Cond. (µS/cm) XX.X _____	
Corrected to 25°C ? O Y O N	

04/08/2013 2013 Field Measurement 2045648267



NRSA 2013/14 SAMPLE COLLECTION (Front)

Reviewed by (initial): _____

Site ID: _____ Date: ___ / ___ / _____

CHEMISTRY (CHEM) (Target Volume = 4L) **STATION COLLECTED:** ○ X-Site (wadeable) ○ Transect A (non-wadeable) ○ Other Transect: ____ ○ No Sample Collected

Sample ID	Chilled	Comments
	○	

WATER COLUMN CHLOROPHYLL (CHLA) (Target Volume = 1000mL; max vol = 2000 mL) ○ No Sample Collected

Sample ID	Volume Filtered (ml)	Frozen	Comments
		○	

COMPOSITE PERIPHYTON ○ No Sample Collected

Composite Volume	No. of Transects	Comments

Assemblage ID (PERI) (50-mL tube)			**Chlorophyll (PCHL)** (GF/F Filter)			**Biomass (PBIO)** (GF/C Filter)		
Sample ID			Sample ID			Sample ID		
Volume (ml)	Preserved	Flag	Volume (ml)	Frozen	Flag	Volume (ml)	Frozen	Flag
	○			○			○	

Flag	Comments

ALGAL TOXIN (Microcystin) (MICX) (Target Volume = 500 mL) ○ No Sample Collected

Sample ID	Frozen	Comments
	○	

ENTEROCOCCI (ENTE) (Target Volume = 250 mL) ○ No Sample Collected ○ Blank Collected

Sample ID	Time Collected (hhmm)	Depth Collected (m)	Sample Volume (mL)	Filt. Start Time (hhmm)	Volume Filtered (Target = 50 mL)		Filt. End Time (hhmm)	Time Frozen (hhmm)
					Filt. 1	Filt. 2		

Comments

Filter blank is collected during visit 1 at all revisit sites.

04/08/2013 2013 Sample Collection 3054051198

DRAFT - DO NOT USE IN FIELD

NRSA 2013/14 SAMPLE COLLECTION (Back)

Site ID: _____ Date: ___ / ___ / _____

BENTHIC MACROINVERTEBRATES (BERW) - WADEABLE

No Sample Collected ○

Sample ID	Number of jars	Preserved (ETOH)	No. of Transects	Comments
		○ Y		

REACH-WIDE BENTHOS - WADEABLE

TRANSECT		A		B		C		D		E		F		G		H		I		J		K	
SUBSTRATE	CHAN.	Sub.	Chan.	Sub.	Chan.	Sub.	Chan.	Sub.	Chan.	Sub.	Chan.	Sub.	Chan.	Sub.	Chan.	Sub.	Chan.	Sub.	Chan.	Sub.	Chan.	Sub.	Chan.
Fine/Sand	Pool	○ F	○ P	○ F	○ P	○ F	○ P	○ F	○ P	○ F	○ P	○ F	○ P	○ F	○ P	○ F	○ P	○ F	○ P	○ F	○ P	○ F	○ P
Gravel	Glide	○ G	○ GL	○ G	○ GL	○ G	○ GL	○ G	○ GL	○ G	○ GL	○ G	○ GL	○ G	○ GL	○ G	○ GL	○ G	○ GL	○ G	○ GL	○ G	○ GL
Coarse	Riffle	○ C	○ RI	○ C	○ RI	○ C	○ RI	○ C	○ RI	○ C	○ RI	○ C	○ RI	○ C	○ RI	○ C	○ RI	○ C	○ RI	○ C	○ RI	○ C	○ RI
Other:	Rapid	○ OT	○ RA	○ OT	○ RA	○ OT	○ RA	○ OT	○ RA	○ OT	○ RA	○ OT	○ RA	○ OT	○ RA	○ OT	○ RA	○ OT	○ RA	○ OT	○ RA	○ OT	○ RA
If other, flag and explain in comments		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag		Flag	

BENTHIC MACROINVERTEBRATES (BETB) - BOATABLE

No Sample Collected ○

Sample ID	Number of jars	Preserved (ETOH)	No. of Transects	Comments
		○ Y		

TRANSECT BENTHOS - BOATABLE

Habitat: C = Coarse Substrate / LWD L = Leaf Pack F = Organic Fine Muds Sand M = Macrophyte beds OT = Other (Flag and explain in comment section below)
Substrate: F = Fine / Sand G = Gravel C = Coarse substrate OT = Other (Flag and explain in comment section below)
Channel: P = Pool GL = Glide RI = Riffle RA = Rapid OT = Other (Flag and explain in comment section below)

TRANSECT Location (L/R):	A ○ L ○ R	B ○ L ○ R	C ○ L ○ R	D ○ L ○ R	E ○ L ○ R	F ○ L ○ R	G ○ L ○ R	H ○ L ○ R	I ○ L ○ R	J ○ L ○ R	K ○ L ○ R
Dominant Habitat: (ONE PER TRANSECT)	○ C ○ L ○ F ○ M ○ OT	○ C ○ L ○ F ○ M ○ OT	○ C ○ L ○ F ○ M ○ OT	○ C ○ L ○ F ○ M ○ OT	○ C ○ L ○ F ○ M ○ OT	○ C ○ L ○ F ○ M ○ OT	○ C ○ L ○ F ○ M ○ OT	○ C ○ L ○ F ○ M ○ OT	○ C ○ L ○ F ○ M ○ OT	○ C ○ L ○ F ○ M ○ OT	○ C ○ L ○ F ○ M ○ OT
Secondary Habitat: (ONE PER TRANSECT)	○ C ○ L ○ F ○ M ○ OT	○ C ○ L ○ F ○ M ○ OT	○ C ○ L ○ F ○ M ○ OT	○ C ○ L ○ F ○ M ○ OT	○ C ○ L ○ F ○ M ○ OT	○ C ○ L ○ F ○ M ○ OT	○ C ○ L ○ F ○ M ○ OT	○ C ○ L ○ F ○ M ○ OT	○ C ○ L ○ F ○ M ○ OT	○ C ○ L ○ F ○ M ○ OT	○ C ○ L ○ F ○ M ○ OT
Substrate: (ONE PER TRANSECT)	○ F ○ C ○ G ○ OT	○ F ○ C ○ G ○ OT	○ F ○ C ○ G ○ OT	○ F ○ C ○ G ○ OT	○ F ○ C ○ G ○ OT	○ F ○ C ○ G ○ OT	○ F ○ C ○ G ○ OT	○ F ○ C ○ G ○ OT	○ F ○ C ○ G ○ OT	○ F ○ C ○ G ○ OT	○ F ○ C ○ G ○ OT
Channel: (ONE PER TRANSECT)	○ P ○ RA ○ RI ○ GL ○ OT	○ P ○ RA ○ RI ○ GL ○ OT	○ P ○ RA ○ RI ○ GL ○ OT	○ P ○ RA ○ RI ○ GL ○ OT	○ P ○ RA ○ RI ○ GL ○ OT	○ P ○ RA ○ RI ○ GL ○ OT	○ P ○ RA ○ RI ○ GL ○ OT	○ P ○ RA ○ RI ○ GL ○ OT	○ P ○ RA ○ RI ○ GL ○ OT	○ P ○ RA ○ RI ○ GL ○ OT	○ P ○ RA ○ RI ○ GL ○ OT
	Flag	Flag	Flag	Flag	Flag	Flag	Flag	Flag	Flag	Flag	Flag

Flag	Comments

04/08/2013 2013 Sample Collection

0629051193

NRSA 2013/14 FISH GEAR AND SAMPLING INFORMATION (Front)

Reviewed by (initial): _____

Site ID: _____ Date: ____ / ____ / ____

FISH SAMPLING PROTOCOL (select one):

- O BOATABLE (20 to 40 Channel Widths (CW))
- O LG. WADEABLE - (>=12.5 m wide) (500 m to 40 CW)
- O WADEABLE - (<12.5 m wide) (40 CW)

Final Length of Fishing Reach (m): _____

FISH SAMPLING - NOT CONDUCTED OR SUSPENDED (select one):

- O Fished - None Collected
- O Not Fished/Fishing suspended - Can't sample >/= 50% of required reach:
  - Boatable (10 CW)
  - Lg. Wadeable (250m or 10 CW, whichever is longer)
  - Wadeable (20 CW)
- O Not Fished - No Permit
- O Not Fished - Site Conditions Prohibit Sampling (Describe in comments)
- O Fishing Suspended - Permit Restriction (Listed species encountered)
- O Not Fished - Equipment Failure
- O Not Fished - Other Explain: _____

O Fast flowing high gradient site

Sampling Protocol Comments: _____

FISH GEAR INFORMATION

Water Visibility: O Good O Poor Water Temp (°C): _____ Cond (uS/cm): _____

Primary Electrofishing Gear

- O BOAT (Motor)
- O RAFT (No motor)
- O BACKPACK
- O BANK OR TOWED BARGE

# of Netters (1): _____
Anodes
Number: _____
Diameters: _____ O in. O cm

Wave Form:
- O AC
- O DC
- O Pulsed DC

Volts: (50-1000) _____
Watts: likely 400 (bp), 2500 or 5000 (boat/raft) _____
Pulse Rate: pps or Hz _____
Amps: (may not be provided for bp) _____

Pulse Width (ms): _____
Total Shock (button) Time (s): _____
Total Fishing Time (min): _____
% of Fishing Reach Sampled: _____

Secondary Electrofishing Gear

- O BOAT (Motor)
- O RAFT (No motor)
- O BACKPACK
- O BANK OR TOWED BARGE

# of Netters (1): _____
Anodes
Number: _____
Diameters: _____ O in. O cm

Wave Form:
- O AC
- O DC
- O Pulsed DC

Volts: (50-1000) _____
Watts: likely 400 (bp), 2500 or 5000 (boat/raft) _____
Pulse Rate: pps or Hz _____
Amps: (may not be provided for bp) _____

Pulse Width (ms): _____
Total Shock (button) Time (s): _____
Total Fishing Time (min): _____
% of Fishing Reach Sampled: _____

Primary Seine Net: O BAG SEINE O MINNOW SEINE No. of crew members: _____

Height (m): _____ Length (m): _____ Mesh (mm): _____ Avg. Haul Length (m): _____ No. of Hauls: _____ Total Seining Time (min): _____ % of Fishing Reach Sampled: _____

Secondary Seine Net: O BAG SEINE O MINNOW SEINE No. of crew members: _____

Height (m): _____ Length (m): _____ Mesh (mm): _____ Avg. Haul Length (m): _____ No. of Hauls: _____ Total Seining Time (min): _____ % of Fishing Reach Sampled: _____

GEAR INFORMATION COMMENTS

04/11/2013 2013 Fish Gear

8573529111

NRSA 2013/14 FISH GEAR AND SAMPLING INFORMATION (Back)

Reviewed by (initial):_____

Site ID: _____ Date: ___ / ___ / _____

QA VOUCHER SAMPLE INFORMATION (VERT) NO VOUCHERS PRESERVED ○

Sample ID	# of Jars	Preserved	Comments
		○	

PHOTO VOUCHER FILE INFORMATION

Page	Line	Photo File Name (SiteID_V(Visit#)_Tag#) (e.g.: SSCT001_V1_Tag01)	Sequence (e.g. a-c)	Comments	Page	Line	Photo File Name (SiteID_V(Visit#)_Tag#) (e.g.: SSCT001_V1_Tag01)	Sequence (e.g. a-c)	Comments

FISH TISSUE PLUG SAMPLES (FPLG) NO SAMPLE COLLECTED ○

Collection Method: ○ ELECTROFISHING ○ HOOK & LINE ○ SEINING ○ OTHER:

Sample ID	Common Name	Length(mm)	Weight(g)	Comments

04/11/2013 2013 Fish Gear

5036529112

NRSA 2013/14 FISH COLLECTION

Reviewed by (initial): _____

Site ID: _____ Date: ___ / ___ / _____ Page ___ of ___

Line #	Common Name	Hybrid?	Introduced?	Tally and Counts <150 mm	Tally and Counts 150-300 mm	Tally and Counts 300-460 mm	Tally and Counts >460 mm	Anom Count	Mortality Count	VOUCHER Unk/Rng	VOUCHER QA	VOUCHER Photo	Voucher Tag #	Vouchers Retained	Flag
1		⊙	⊙							⊙	⊙	⊙			
2		⊙	⊙							⊙	⊙	⊙			
3		⊙	⊙							⊙	⊙	⊙			
4		⊙	⊙							⊙	⊙	⊙			
5		⊙	⊙							⊙	⊙	⊙			
6		⊙	⊙							⊙	⊙	⊙			
7		⊙	⊙							⊙	⊙	⊙			
8		⊙	⊙							⊙	⊙	⊙			
9		⊙	⊙							⊙	⊙	⊙			
10		⊙	⊙							⊙	⊙	⊙			
11		⊙	⊙							⊙	⊙	⊙			
12		⊙	⊙							⊙	⊙	⊙			
13		⊙	⊙							⊙	⊙	⊙			
14		⊙	⊙							⊙	⊙	⊙			

Flag	Comments	Flag	Comments

Flag codes: K = No measurement made, F1,F2, etc. = flags assigned by each field crew. Explain all flags in comments.

04/08/2013 2013 Fish Collection

2005309133

NRSA 2013/14 SEINING INFORMATION

Reviewed by (initial): ______

Site ID: ____________ Date: __ / __ / ____

Subreach (e.g., A-B)	Bank	Habitat Sampled (choose one)	If other, describe:	Seine Width (m)	Seine Depth (m)	Approx Haul Distance (m)	Approx Haul Time (sec)	Fish Collected?	Additional Person	Flag
	O L O R O CH	O PL O GL O RF O BW O ED O SN O Other:						O	O	
	O L O R O CH	O PL O GL O RF O BW O ED O SN O Other:						O	O	
	O L O R O CH	O PL O GL O RF O BW O ED O SN O Other:						O	O	
	O L O R O CH	O PL O GL O RF O BW O ED O SN O Other:						O	O	
	O L O R O CH	O PL O GL O RF O BW O ED O SN O Other:						O	O	
	O L O R O CH	O PL O GL O RF O BW O ED O SN O Other:						O	O	
	O L O R O CH	O PL O GL O RF O BW O ED O SN O Other:						O	O	
	O L O R O CH	O PL O GL O RF O BW O ED O SN O Other:						O	O	
	O L O R O CH	O PL O GL O RF O BW O ED O SN O Other:						O	O	
	O L O R O CH	O PL O GL O RF O BW O ED O SN O Other:						O	O	
	O L O R O CH	O PL O GL O RF O BW O ED O SN O Other:						O	O	
	O L O R O CH	O PL O GL O RF O BW O ED O SN O Other:						O	O	
	O L O R O CH	O PL O GL O RF O BW O ED O SN O Other:						O	O	
	O L O R O CH	O PL O GL O RF O BW O ED O SN O Other:						O	O	
	O L O R O CH	O PL O GL O RF O BW O ED O SN O Other:						O	O	

BANK: L = Left Bank (facing downstream R = Right Bank (facing downstream) CH = In Channel
HABITAT SAMPLED: PL = Pool, GL = Glide/Run, RF = Riffle, ED = Edge, SN = Snag, BW = Backwater or side channel, OT = Other (describe)
FLAG CODES: K = No measurement made, U = Suspect measurement., F1,F2, etc. = flags assigned by each field crew. Explain all flags in comments.

Flag	Comments

04/08/2013 2013 Seining Information 9533043973

NRSA 2013/14 WHOLE FISH TISSUE COLLECTION

Reviewed by (initial): _____

○ WADEABLE ○ BOATABLE

Site ID: _____ Date: ____ / ____ / _____ PAGE: ____ OF ____

WHOLE FISH TISSUE FILLET SAMPLE (FTIS) **SAMPLE ID:** _____ NO SAMPLE COLLECTED ○

○ FISH ARE ALL THE SAME SPECIES ○ FISH ALL WITHIN 75% OF LARGEST SPECIMEN

	Common Name	Total Length (mm)	Frozen	Comments
.01			○	
.02			○	
.03			○	
.04			○	
.05			○	
.06*			○	
.07*			○	
.08*			○	
.09*			○	
.10*			○	

*Additional specimens for smaller fish species to ensure sufficient tissue is available for chemical analysis of fillet tissue.

04/08/2013 2013 Fish Tissue Collection 2227506532

Reviewed by (initial): _____

NRSA 2013/14 PHAB: CHANNEL/RIPARIAN TRANSECT (Front) - BOATABLE ONLY

Site ID: _____ Date: ___ / ___ / _____

TRANSECT: O A O B O C O D O E O F O G O H O I O J O K

Chosen bank side: (Facing down stream) O Left O Right

Midstream	Decimal Degrees Latitude	___.____	Longitude - ___.____
Bank	Decimal Degrees Latitude	___.____	Longitude - ___.____

"LITTORAL" and SHORELINE SUBSTRATE INFORMATION

SHORE DOM	SHORE SEC	BOTTOM DOM	BOTTOM SEC	CLASS — BOTTOM SUBSTRATE FROM (X ONE): O Judgement-or- O OBS. @ 5 Littoral Depths — Flag ____
O	O	O	O	RS = Bedrock (Smooth) - (Larger than a car)
O	O	O	O	RR = Bedrock (Rough) - (Larger than a car)
O	O	O	O	XB = Large Boulder (1000 to 4000 mm) - (Meterstick to car)
O	O	O	O	SB = Small Boulder (250 to 1000 mm) - (Basketball to Meterstick)
O	O	O	O	CB = Cobble (64 to 250 mm) - (Tennis ball to Basketball)
O	O	O	O	GC = Coarse Gravel (16 to 64 mm) - (Marble to Tennis ball)
O	O	O	O	GF = Fine Gravel (2 to 16 mm) - (Ladybug to marble)
O	O	O	O	SA = Sand (0.06 to 2 mm) - (Gritty - up to Ladybug size)
O	O	O	O	FN = Silt / Clay / Muck - (Not Gritty)
O	O	O	O	HP = Hardpan - (Firm, Consolidated Fine Substrate)
O	O	O	O	WD = Wood - (Any Size)
O	O	O	O	OT = Other (Write comment below)

DEPTH O ft O m

	SONAR XX.X	POLE X.X	FLAG

BANK CHARACTERISTICS

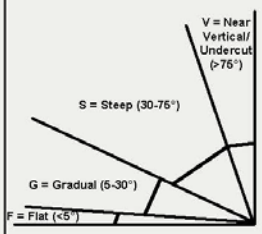
	X.XX (m)	FLAG
Wetted Width		
Bar Width		
Bankfull Width		
Bankfull Height		
Incised Height		

LARGE WOODY DEBRIS (10 x 20m Plot) Tally each piece — FILL IN IF UNMARKED BOXES ARE ZERO O — FLAG: ____

DIAMETER LARGE END	Wood All/Part in Wetted Channel: Length 5-15m	15-30m	>30m	Dry by All/Part in Bankfull Channel: Length 5-15m	15-30m	>30m
0.3-0.6 m						
0.6-0.8 m						
0.8-1.0 m						
> 1.0 m						

BANK ANGLE CIRCLE ONE

O V O S O G O F



SLOPE/BEARING/DISTANCE (Optional): Slope and Bearing not determined (use map) O

Determine slope if feasible in terms of time and distances. Record GPS coordinates if practical.

INTENDED transect spacing xxx (m): ____ ACTUAL transect spacing xxx (m): ____

Supplemental Waypoints

	Slope XX.X %	Backsite Bearing 0 - 360	Distance (m)	Way Point #	GPS Latitude - decimal degrees	GPS Longitude - decimal degrees	Flag
MAIN					___.____	-___.____	
1ST					___.____	-___.____	
2ND					___.____	-___.____	
3RD					___.____	-___.____	

Flag	Comments

Flag Codes: U = suspect or non-standard measurement; F1, F2, etc. = flags assigned by each field crew. Explain all flags in comments section.

04/08/2013 2013 Phab Channel Riparian - Boatable (Front) 7231169289

Reviewed by (initial): _____

NRSA 2013/14 PHAB: CHANNEL/RIPARIAN TRANSECT (Back) - BOATABLE ONLY

Site ID: _____ Date: ___ / ___ / _____

TRANSECT: O A O B O C O D O E O F O G O H O I O J O K Chosen bank side: (Facing down stream) O Left O Right

VISUAL RIPARIAN ESTIMATES

0 = Absent (0%) 1 = Sparse (<10%) 2 = Moderate (10-40%) 3 = Heavy (40-75%) 4 = VeryHeavy (>75%)
D = Deciduous C = Coniferous E = Broadleaf Evergreen M = Mixed N = None

RIPARIAN VEGETATION COVER Canopy (>5 m high)	Left Bank	Flag	Right Bank	Flag
Woody Vegetation Type	O O O O O		O O O O O	
BIG Trees (Trunk >0.3 m DBH)	O 1 2 3 4		O 1 2 3 4	
SMALL Trees (Trunk <0.3 m DBH)	O 1 2 3 4		O 1 2 3 4	
Understory (0.5 to 5 m high)				
Woody Vegetation Type	O O O O O		O O O O O	
Woody Shrubs & Saplings	O 1 2 3 4		O 1 2 3 4	
Non-Woody Herbs, Grasses, & Forbs	O 1 2 3 4		O 1 2 3 4	
Ground Cover (<0.5 m high)				
Woody Shrubs & Saplings	O 1 2 3 4		O 1 2 3 4	
Non-Woody Herbs, Grasses and Forbs	O 1 2 3 4		O 1 2 3 4	
Barren, Bare Dirt or Duff	O 1 2 3 4		O 1 2 3 4	

HUMAN INFLUENCE 0 = Not Present P = >10 m C = Within 10 m plot B = On Bank				
Wall/Dike/Revetment /Riprap/Dam	O P C B		O P C B	
Buildings	O P C B		O P C B	
Pavement/Cleared Lot	O P C B		O P C B	
Road/Railroad	O P C B		O P C B	
Pipes (Inlet/Outlet)	O P C B		O P C B	
Landfill/Trash	O P C B		O P C B	
Park/Lawn	O P C B		O P C B	
Row Crops	O P C B		O P C B	
Pasture/Range/Hay Field	O P C B		O P C B	
Logging Operations	O P C B		O P C B	
Mining Activity	O P C B		O P C B	

FISH COVER/OTHER (10m x 20m Plot)

0 = Absent (0%) 1 = Sparse (<10%) 2 = Moderate (10-40%)
3 = Heavy (40-75%) 4 = VeryHeavy (>75%)

	In-channel Cover	Flag
Filamentous Algae	O 1 2 3 4	
Macrophytes	O 1 2 3 4	
Woody Debris >0.3 m (BIG)	O 1 2 3 4	
Brush/Woody Debris <0.3 m (SMALL)	O 1 2 3 4	
Live Trees in Stream	O 1 2 3 4	
Overhanging Veg. =<1 m of Surface	O 1 2 3 4	
Undercut Banks	O 1 2 3 4	
Boulders/Ledges	O 1 2 3 4	
Human Structures	O 1 2 3 4	

CHANNEL CONSTRAINT

Distance from shore to riparian vegetation (m) XXX _____

Mark only one: Flag _____

- O Channel is Constrained
- O Channel is in Broad Valley but constrained by incision
- O Channel is in Narrow Valley but NOT very constrained
- O Channel is Unconstrained in Broad Valley

Mark only one: Flag _____

- O Yes, I could readily see over the bank
- O No, I could not readily see over the bank

CANOPY DENSITY @ BANK

DENSIOMETER (0-17Max)

	Flag			Flag
Up			Left	
Down			Right	

Flag	Comments

Flag Codes: U = suspect or non-standard measurement; F1, F2, etc. = flags assigned by each field crew. Explain all flags in comments section.

04/08/2013 2013 Phab Channel Riparian - Boatable (Back) 7154355572

NRSA 2013/14 PHAB: THALWEG PROFILE - BOATABLE ONLY

Reviewed by (initial): _____

Site ID: _____ Date: ____ / ____ / ____

TRANSECT: O A-B O B-C O C-D O D-E O E-F O F-G O G-H O H-I O I-J O J-K

SUBSTRATE CODES	CHANNEL HABITAT CODES	OTHER
BH = BEDROCK/HARDPAN (SMOOTH OR ROUGH) - (LARGER THAN A CAR) BL = BOULDER (250 TO 4000 mm) - BASKETBALL TO CAR) CB = COBBLE (64 TO 250 mm) - (TENNIS BALL TO BASKETBALL) GR = COARSE TO FINE GRAVEL (2 TO 64 mm) - (LADYBUG TO TENNIS BALL) SA = SAND (0.06 TO 2 mm) - (GRITTY - UP TO LADYBUG SIZE) FN = SILT/ CLAY / MUCK - (NOT GRITTY) OT = OTHER (Flag and write comment below)	PO = Pool GL = Glide RI = Riffle RA = Rapid CA = Cascade FA = Falls DR = Dry Channel	Off Channel = Off Channel or Backwater

REMEMBER: A = Upstream end of Reach and K = Downstream end of Reach.

THALWEG PROFILE

STATION	SNAG	DEPTH (Either) UNITS: O ft O m — SONAR XX.X	DEPTH (Either) UNITS: O ft O m — POLE X.X	SUBSTRATE Fill in one Substrate Code for each station	CHANNEL HABITAT Fill in one Channel Habitat Code for each station	OFF CHAN.	FLAG
0	O			O BH O BL O CB O GR O SA O FN O OT	O PO O GL O RI O RA O CA O FA O DR	O	
1	O			O BH O BL O CB O GR O SA O FN O OT	O PO O GL O RI O RA O CA O FA O DR	O	
2	O			O BH O BL O CB O GR O SA O FN O OT	O PO O GL O RI O RA O CA O FA O DR	O	
3	O			O BH O BL O CB O GR O SA O FN O OT	O PO O GL O RI O RA O CA O FA O DR	O	
4	O			O BH O BL O CB O GR O SA O FN O OT	O PO O GL O RI O RA O CA O FA O DR	O	
5	O			O BH O BL O CB O GR O SA O FN O OT	O PO O GL O RI O RA O CA O FA O DR	O	
6	O			O BH O BL O CB O GR O SA O FN O OT	O PO O GL O RI O RA O CA O FA O DR	O	
7	O			O BH O BL O CB O GR O SA O FN O OT	O PO O GL O RI O RA O CA O FA O DR	O	
8	O			O BH O BL O CB O GR O SA O FN O OT	O PO O GL O RI O RA O CA O FA O DR	O	
9	O			O BH O BL O CB O GR O SA O FN O OT	O PO O GL O RI O RA O CA O FA O DR	O	
10	O			O BH O BL O CB O GR O SA O FN O OT	O PO O GL O RI O RA O CA O FA O DR	O	
11	O			O BH O BL O CB O GR O SA O FN O OT	O PO O GL O RI O RA O CA O FA O DR	O	

Flag	Comment

Flag codes: U = Suspect sample; F1, F2, etc. = flag assigned by field crew. Explain all flags in comment sections.

04/15/2013 2013 Phab Thalweg Profile - Boatable 6700391398

NRSA 2013/14 PHAB: CHANNEL/RIPARIAN CROSS-SECTION - WADEABLE ONLY

Reviewed by (initial): _____

Site ID: _____ Date: ___ / ___ / _____ TRANSECT: ○A ○B ○C ○D ○E ○F ○G ○H ○I ○J ○K ○ Extra Side Channel

SUBSTRATE CROSS-SECTIONAL INFORMATION

	Dist LB XX.XX m	Depth XXX cm	Size Class Code	Embed. 0-100%	Flag
Left					
LCtr					
Ctr					
RCtr					
Right					

SUBSTRATE SIZE CLASS CODES — Embed. (%)
- RS = Bedrock (Smooth) - (Larger than a car) — 0
- RR = Bedrock (Rough) - (Larger than a car) — 0
- RC = Concrete/Asphalt
- XB = Large Boulder (1000 to 4000 mm) - (Meterstick to car)
- SB = Small Boulder (250 to 1000 mm) - (Basketball to meterstick)
- CB = Cobble (64 to 250 mm) - (Tennis ball to Basketball)
- GC = Coarse Gravel (16 to 64 mm) - (Marble to Tennis ball)
- GF = Fine Gravel (2 to 16 mm) - (Ladybug to marble)
- SA = Sand (0.06 to 2 mm) - (Gritty - up to Ladybug size) — 100
- FN = Silt / Clay / Muck - (Not Gritty) — 100
- HP = Hardpan - (Firm, Consolidated Fine Substrate) — 0
- WD = Wood - (Any Size)
- OT = Other (Write comment below)

FISH COVER/OTHER

0 = Absent (0%) 1 = Sparse (<10%) 2 = Moderate (10-40%) 3 = Heavy (40-75%) 4 = VeryHeavy (>75%)

	Cover in Channel	Flag
Filamentous Algae	○0 ○1 ○2 ○3 ○4	
Macrophytes	○0 ○1 ○2 ○3 ○4	
Woody Debris >0.3 m (BIG)	○0 ○1 ○2 ○3 ○4	
Brush/Woody Debris <0.3 m (SMALL)	○0 ○1 ○2 ○3 ○4	
Live Trees or Roots	○0 ○1 ○2 ○3 ○4	
Overhanging Veg. =<1 m of Surface	○0 ○1 ○2 ○3 ○4	
Undercut Banks	○0 ○1 ○2 ○3 ○4	
Boulders	○0 ○1 ○2 ○3 ○4	
Artificial Structures	○0 ○1 ○2 ○3 ○4	

VISUAL RIPARIAN ESTIMATES

0 = Absent (0%) 1 = Sparse (<10%) 2 = Moderate (10-40%) 3 = Heavy (40-75%) 4 = VeryHeavy (>75%)

D = Deciduous C = Coniferous E = Broadleaf Evergreen M = Mixed N = None

RIPARIAN VEGETATION COVER Canopy (>5 m high)	Left Bank	Flag:	Right Bank	Flag:
Woody Vegetation Type	○D ○C ○E ○M ○N		○D ○C ○E ○M ○N	
BIG Trees (trunk >0.3 m DBH)	○0 ○1 ○2 ○3 ○4		○0 ○1 ○2 ○3 ○4	
SMALL Trees (trunk <0.3 m DBH)	○0 ○1 ○2 ○3 ○4		○0 ○1 ○2 ○3 ○4	
Understory (0.5 to 5 m high)				
Woody Vegetation Type	○D ○C ○E ○M ○N		○D ○C ○E ○M ○N	
Woody Shrubs & Saplings	○0 ○1 ○2 ○3 ○4		○0 ○1 ○2 ○3 ○4	
Non-Woody Herbs, Grasses, & Forbs	○0 ○1 ○2 ○3 ○4		○0 ○1 ○2 ○3 ○4	
Ground Cover (<0.5 m high)				
Woody Shrubs & Saplings	○0 ○1 ○2 ○3 ○4		○0 ○1 ○2 ○3 ○4	
Non-Woody Herbs, Grasses and Forbs	○0 ○1 ○2 ○3 ○4		○0 ○1 ○2 ○3 ○4	
Barren, Bare Dirt or Duff	○0 ○1 ○2 ○3 ○4		○0 ○1 ○2 ○3 ○4	

BANK MEASUREMENTS

	Bank Angle 0 - 360	Undercut Dist. (m)	Flag
Left			
Right			
Wetted Width XXX.X m			
Bar Width XX.X m			
Bankfull Width XXX.X m			
Bankfull Height XX.X m			
Incised Height XX.X m			

CANOPY COVER MEASUREMENTS

DENSIOMETER (0-17Max)

		Flag			Flag
CenUp			CenR		
CenL			Left		
CenDwn			Right		

HUMAN INFLUENCE 0 = Not Present P = >10 m C = Within 10 m plot B = On Bank

		Flag:		Flag:
Wall/Dike/Revetment /Riprap/Dam	○0 ○P ○C ○B		○0 ○P ○C ○B	
Buildings	○0 ○P ○C ○B		○0 ○P ○C ○B	
Pavement/Cleared Lot	○0 ○P ○C ○B		○0 ○P ○C ○B	
Road/Railroad	○0 ○P ○C ○B		○0 ○P ○C ○B	
Pipes (Inlet/Outlet)	○0 ○P ○C ○B		○0 ○P ○C ○B	
Landfill/Trash	○0 ○P ○C ○B		○0 ○P ○C ○B	
Park/Lawn	○0 ○P ○C ○B		○0 ○P ○C ○B	
Row Crops	○0 ○P ○C ○B		○0 ○P ○C ○B	
Pasture/Range/Hay Field	○0 ○P ○C ○B		○0 ○P ○C ○B	
Logging Operations	○0 ○P ○C ○B		○0 ○P ○C ○B	
Mining Activity	○0 ○P ○C ○B		○0 ○P ○C ○B	

Flag	Comments

Flag codes: K = Sample not collected; U = Suspect sample; F1, F2, etc. = flag assigned by field crew. Explain all flags in comment sections.

9989625187

04/08/2013 2013 Phab Channel Riparian - Wadeable

NRSA 2013/14 PHAB: THALWEG PROFILE & WOODY DEBRIS - WADEABLE ONLY

Reviewed by (initial): ______

Site ID: ____________ Date: ___ / ___ / ______

TRANSECT: ○ A-B ○ B-C ○ C-D ○ D-E ○ E-F ○ F-G ○ G-H ○ H-I ○ I-J ○ J-K

THALWEG PROFILE

For Transect A-B ONLY: Increment (m) X.X: ______ Total Reach Length (m): ______

STA-TION	THALWEG DEPTH (cm) (XXX)	WETTED WIDTH (m) (XXX.X)	BAR WIDTH[1] Present	BAR WIDTH[1] XX.X	SOFT /SMALL SEDI-MENT	CHANNEL UNIT CODE	SIDE CHANNEL	BACK WATER	THALWEG PROFILE COMMENTS
0			Y		Y		Y	Y	
1			Y		Y		Y	Y	
2			Y		Y		Y	Y	
3			Y		Y		Y	Y	
4			Y		Y		Y	Y	
*5			Y		Y		Y	Y	
6			Y		Y		Y	Y	
*7			Y		Y		Y	Y	
8			Y		Y		Y	Y	
9			Y		Y		Y	Y	
10			Y		Y		Y	Y	
11			Y		Y		Y	Y	
12			Y		Y		Y	Y	
13			Y		Y		Y	Y	
14			Y		Y		Y	Y	

CHANNEL UNIT CODES: PO = Pool GL = Glide RI = Riffle RA = Rapid CA = Cascade FA = Falls DR = Dry

SUBSTRATE

Station (5 or 7)	LFT	LCTR	CTR	RCTR	RGT	FLAG

RS = BEDROCK (SMOOTH) - (LARGER THAN A CAR)
RR = BEDROCK (ROUGH) - (LARGER THAN A CAR)
RC = CONCRETE/ASPHALT
XB = LG. BOULDER (1000 TO 4000 mm) - METERSTICK TO CAR)
SB = SM. BOULDER (250 TO 1000 mm) - BASKETBALL TO METERSTICK)
CB = COBBLE (64 TO 250 mm) - (TENNIS BALL TO BASKETBALL)
GC = COARSE GRAVEL (16 TO 64 mm) - (MARBLE TO TENNIS BALL)
GF = FINE GRAVEL (2 TO 16 mm) - (LADYBUG TO MARBLE)
SA = SAND (0.06 TO 2 mm) - (GRITTY - UP TO LADYBUG SIZE)
FN = SILT/CLAY/MUCK - (NOT GRITTY)
HP = HARDPAN - FIRM, CONSOLIDATED FINE SUBSTRATE)
WD = WOOD - (ANY SIZE)
OT = OTHER (FLAG AND EXPLAIN IN COMMENTS)

FLAG	COMMENTS (for SUBSTRATE and LWD)

LARGE WOODY DEBRIS
(10 cm small end diameter; 1.5 m length)

FILL IN IF UNMARKED BOXES ARE ZERO ○ FLAG: ______

DIAMETER LARGE END	PIECES ALL/PART IN BANKFULL CHANNEL Length 1.5-5m	5-15m	>15m	PIECES BRIDGE ABOVE BANKFULL CHANNEL Length 1.5-5m	5-15m	>15m
0.1-<0.3 m						
0.3-0.6 m						
0.6-0.8 m						
>0.8 m						

1 = Measure Bar Width at Station 0 and Mid-Station (5 or 7).

Flag Codes: K = no measurement made; U = suspect measurement; F1, F2, etc. = flags assigned by each field crew. Explain all flags in comments.

04/08/2013 2013 Phab Thalweg Profile - Wadeable

0629292011

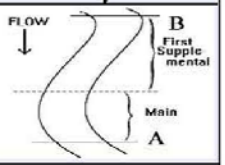
NRSA 2013/14 PHAB: SLOPE AND BEARING - WADEABLE ONLY

Reviewed by (initial): _____

Site ID: _____ Date: ____ / ____ / ____

MAIN (always used)					FIRST SUPPLEMENTAL			SECOND SUPPLEMENTAL			
TRANSECT & METHOD Mark method for every Transect		Slope(%) or Elev. Diff. (cm) Mark Units for every Transect	BEARING 0 - 359	PROPOR-TION %	Slope(%) or Elev. Diff. (cm)	BEARING 0 - 359	PROPOR-TION %	Slope(%) or Elev. Diff. (cm)	BEARING 0 - 359	PROPOR-TION %	FLAG
A < B	O CL O TR O HL O WT O LA O Other	O % O cm									
B < C	O CL O TR O HL O WT O LA O Other	O % O cm									
C < D	O CL O TR O HL O WT O LA O Other	O % O cm									
D < E	O CL O TR O HL O WT O LA O Other	O % O cm									
E < F	O CL O TR O HL O WT O LA O Other	O % O cm									
F < G	O CL O TR O HL O WT O LA O Other	O % O cm									
G < H	O CL O TR O HL O WT O LA O Other	O % O cm									
H < I	O CL O TR O HL O WT O LA O Other	O % O cm									
I < J	O CL O TR O HL O WT O LA O Other	O % O cm									
J < K	O CL O TR O HL O WT O LA O Other	O % O cm									

Flag	Comments



Flag codes: U = Suspect sample; F1, F2, M (M = Method - used for method comment only) = flag assigned by field crew. Explain all flags in comment sections.
CL=Clinometer; HL=Hand Level; LA=Laser rangefinder with electronic clinometer; TR=Transit, surveyors level or total station; WT=Water Tubing.

04/08/2013 2013 Slope and Bearing

7777364269

NRSA 2013/14 TORRENT EVIDENCE ASSESSMENT

Reviewed by (initial): _____

Site ID: _____ Date: ____ / ____ / ____

Please fill in any of the following that are evident.

EVIDENCE OF TORRENT SCOURING:	
○	01 - Stream channel has a recently devegetated corridor two or more times the width of the low flow channel. This corridor lacks riparian vegetation with possible exception of fireweed, even-aged alder or cottonwood seedlings, grasses, or other herbaceous plants.
○	02 - Stream substrate cobbles or large gravel particles are NOT IMBRICATED. (Imbricated means that they lie with flat sides horizontal and that they are stacked like roof shingles -- imagine the upstream direction as the top of the "roof.") In a torrent scour or deposition channel, the stones are laying in unorganized patterns, lying "every which way." In addition many of the substrate particles are angular (not "water-worn.")
○	03 - Channel has little evidence of pool-riffle structure. (For example, could you ride a mountain bike down the channel?)
○	04 - The stream channel is scoured down to bedrock for substantial portion of reach.
○	05 - There are gravel or cobble berms (little levees) above bankfull level.
○	06 - Downstream of the scoured reach (possibly several miles), there are massive deposits of sediment, logs, and other debris.
○	07 - Riparian trees have fresh bark scars at many points along the stream at seemingly unbelievable heights above the channel bed.
○	08 - Riparian trees have fallen into the channel as a result of scouring near their roots.
EVIDENCE OF TORRENT DEPOSITS:	
○	09 - There are massive deposits of sediment, logs, and other debris in the reach. They may contain wood and boulders that, in your judgement, could not have been moved by the stream at even extreme flood stage.
○	10 - If the stream has begun to erode newly laid deposits, it is evident that these deposits are "MATRIX SUPPORTED." This means that the large particles, like boulders and cobbles, are often not touching each other, but have silt, sand, and other fine particles between them (their weight is supported by these fine particles -- in contrast to a normal stream deposit, where fines, if present, normally "fill-in" the interstices between coarser particles.)
NO EVIDENCE:	
○	11 - No evidence of torrent scouring or torrent deposits.
COMMENTS	

04/08/2013 2013 Torrent Evidence 3362134147

NRSA 2013/14 DISCHARGE - WADEABLE ONLY

Reviewed by (initial): _____

Site ID: _____ Date: ___ / ___ / _____

○ Velocity Area

Distance Units	Depth Units	Velocity Units
○ ft ○ cm	○ ft ○ cm	○ ft/s XX.X ○ m/s X.XX

	Dist. from Bank	Depth	Velocity	Flag
1	0			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

○ Timed Filling

Repeat	Volume (L)	Time (s)	Flag
1	.	.	
2	.	.	
3	.	.	
4	.	.	
5	.	.	

○ Neutral Buoyant Object

	Float 1	Float 2	Float 3
Float Dist. ○ ft ○ m			
Float Time (s)			
Flag			

Cross Sections on Float Reach

	Upper Section	Middle Section	Lower Section
Width ○ ft ○ m	.	.	.
Depth 1 ○ ft ○ cm			
Depth 2			
Depth 3			
Depth 4			
Depth 5			

○ Q Value

If discharge is determined directly in field, record value here: Q = _____ ○ cfs ○ m^3/s FLAG ____

Flag	Comments

04/08/2013 2013 Discharge 8103048936

NRSA 2013/14 CHANNEL CONSTRAINT

Reviewed by (initial): ____

Site ID: _____ Date: ____ / ____ / _____

CHANNEL PATTERN (Fill in one):

- O One Channel
- O Anastomosing (complex) channel - (Relatively long major and minor channels branching and rejoining.)
- O Braided channel - (Multiple short channels branching and rejoining - mainly one channel broken up by numerous mid-channel bars.)

CHANNEL CONSTRAINT(Fill in one):

- O Channel very constrained in V-shaped valley (i.e. it is very unlikely to spread out over valley or erode a new channel during flood)
- O Channel is in Broad Valley but channel movement by erosion during floods is constrained by Incision (Flood flows do not commonly spread over valley floor or into multiple channels.)
- O Channel is in Narrow Valley but is not very constrained, but limited in movement by relatively narrow valley floor (< ~10 x bankfull width)
- O Channel is Unconstrained in Broad Valley (i.e. during flood it can fill off-channel areas and side channels, spread out over flood plain, or easily cut new channels by erosion)

CONSTRAINING FEATURES (Fill in one):

- O Bedrock (i.e. channel is a bedrock-dominated gorge)
- O Hillslope (i.e. channel constrained in narrow V-shaped valley)
- O Terrace (i.e. channel is constrained by its own incision into river/stream gravel/soil deposits)
- O Human Bank Alterations (i.e. constrained by rip-rap, landfill, dike, road, etc.)
- O No constraining features

Percent of channel length with margin in contact with constraining feature: ____ % (0-100%) ----->

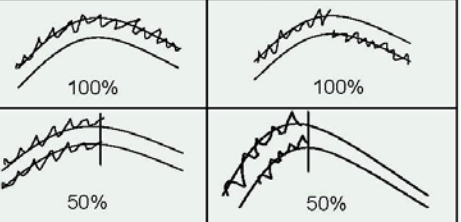
Bankfull width: _____ (m)

Valley width (Visual Estimated Average): _____ (m)

Note: Be sure to include distances between both sides of valley border for valley width.

If you cannot see the valley borders, record the distance you can see and fill this bubble O

Percent of Channel Margin Examples



COMMENTS

04/08/2013 2013 Channel Constraint

1742268066

NRSA 2013/14 ASSESSMENT (Front)

Reviewed by (initial): _____

Site ID: _____ Date: ____ / ____ / ____

Elevation at transect K: _____ O ft O m

WATERSHED ACTIVITIES AND DISTURBANCES OBSERVED
(Intensity: Blank=Not observed, L=Low, M=Moderate, H=Heavy)

BLANK FIELD INDICATES ABSENCE: O

Residential	Recreational	Agricultural	Industrial	Stream Management
O M H Residences	O M H Hiking Trails	O M H Cropland	O M H Industrial Plants	O M H Liming
O M H Maintained Lawns	O M H Parks, Campgrounds	O M H Pasture	O M H Mines/Quarries	O M H Chemical Treatment
O M H Construction	O M H Primitive Parks, Camping	O M H Livestock Use	O M H Oil/Gas Wells	O M H Angling Pressure
O M H Pipes, Drains	O M H Trash/Litter	O M H Orchards	O M H Power Plants	O M H Dredgong
O M H Dumping	O M H Surface Films, Scums, or Slicks	O M H Poultry	O M H Logging	O M H Channelization
O M H Roads		O M H Feedlot	O M H Evidence of Fire	O M H Water Level Fluctuations
O M H Bridges/Causeway		O M H Water Withdrawal	O M H Odors	O M H Fish Stocking
O M H Sewage Treatment			O M H Commercial	O M H Dams

SITE CHARACTERISTICS (200m radius)

WATERBODY CHARACTER

PRISTINE: O 5 O 4 O 3 O 2 O 1 Highly Disturbed

APPEALING: O 5 O 4 O 3 O 2 O 1 Unappealing

BEAVER

Beaver Signs: O Absent O Rare O Common

Beaver Flow Modifications: O None O Minor O Major

DOMINANT LAND USE

Dominant Land Use Around 'X' O Forest O Agriculture O Range O Urban O Suburban/Town

If Forest, Dominant Age Class O 0 - 25 yrs. O 25 - 75 yrs. O > 75 yrs.

WEATHER

CONDITIONS AND LOCAL CONTACTS

OBSERVATIONS (e.g. accessibility, boating, fishing, swimming, health concerns):

04/08/2013 2013 Assessment 0351596807

Reviewed by (initial): _____

NRSA 2013/14 ASSESSMENT (Back)

Site ID: _____ Date: ____ / ____ / ____

GENERAL ASSESSMENT AND COMMENTS

INVASIVE OR NUISANCE SPECIES OF LOCAL INTEREST

Record species of plants and animals that were observed but are not on the invasive plant form. Examples would be Zebra Mussel or New Zealand Mud Snail, or invasive plants or animals of concern to a particular state. Indicate your level of confidence in your identification, and provide some idea of how prevalent it is in the sampling reach or adjacent riparian area.

Species (Common Name)	Confidence	Prevalence	Comments
	O LOW O HIGH	O DOMINANT O SPARSE O COMMON	
	O LOW O HIGH	O DOMINANT O SPARSE O COMMON	
	O LOW O HIGH	O DOMINANT O SPARSE O COMMON	
	O LOW O HIGH	O DOMINANT O SPARSE O COMMON	
	O LOW O HIGH	O DOMINANT O SPARSE O COMMON	
	O LOW O HIGH	O DOMINANT O SPARSE O COMMON	
	O LOW O HIGH	O DOMINANT O SPARSE O COMMON	
	O LOW O HIGH	O DOMINANT O SPARSE O COMMON	

04/08/2013 2013 Assessment 0986596801

NRSA 2013/14 SITE AND SAMPLE STATUS/WATER CHEMISTRY LAB TRACKING

Site ID: _____ Visit #: ○ 1 ○ 2 Date Collected: ____/____/_____

State of Site Location: _____ Crew: _____

Sender: _____ Sender Phone: _____ - _____ - _____

Shipped by: ○ FedEx ○ UPS ○ Hand Delivery ○ Other: _____

Airbill/Tracking Number: _____ Date Sent: ____/____/_____

Site Status - Is Site Sampleable?

○ YES If Yes, check one below

SAMPLEABLE (Choose method used)

- ○ Wadeable - Continuous water, greater than 50% wadeable
- ○ Boatable
- ○ Partial - Sampled by wading (>50% of reach sampled). Explain below.
- ○ Partial - Sampled by boat (>50% of reach sampled). Explain below.
- ○ Wadeable Interrupted - Not continuous water along reach
- ○ Boatable Interrupted - Not continuous water along reach
- ○ Altered - Stream/River Channel Present but differs from Map

○ NO If No, check one below

NON-SAMPLEABLE-PERMANENT

- ○ Dry - Visited
- ○ Dry - Not visited
- ○ Wetland (No Definable Channel)
- ○ Map Error (No evidence of channel/waterbody ever present)
- ○ Impounded (> 7 day residence time)
- ○ Tidal (exceeds salinity threshold)

NON-SAMPLEABLE-TEMPORARY

- ○ Other (explain in comments)
- ○ Not boatable - Need a different crew - Reschedule for this year
- ○ Not wadeable - Need a different crew - Reschedule for this year

NO ACCESS

- ○ Other (Explain in comments)
- ○ Access Permission Denied
- ○ Permanently Inaccessible (Unable/Unsafe to Reach Site)
- ○ Temporarily Inaccessible-Fire, etc. - Reschedule for next year

Sample Status - Water Chemistry Lab Samples

Sample ID	Sample Type	Sent to WRS	Sent to State (Note in Comments)	Not Collected	Comments
_____	CHEM	○	○	○	
_____	CHLA	○	○	○	
_____	PBIO	○	○	○	
_____	PCHL	○	○	○	

Sample Status - Batch Samples

Sample Type	Collected	Not Collected	Comments	Sample Type	Collected	Not Collected	Comments
BERW	○	○		FPLG	○	○	
BETB	○	○		FTIS	○	○	
ENTE	○	○		PERI	○	○	
MICX	○	○		VERT	○	○	

FIELD FORM STATUS Field Data Submission via (check one): ○ Electronic APP ○ Paper Forms ○ Partial App/Partial Form

Water Chemistry Lab

Attn: Phil Monaco, Dynamac
c/o U.S. EPA
1350 SE Goodnight Ave
Corvallis, OR 97333
Phone: 541-754-4720
Email:
monaco.phil@epamail.epa.gov

Completed by Lab

Date Received:
____/____/_____
Received by:
_____

Send completed forms to:

EMAIL:
sampletracking@epa.gov

FAX: 541-754-4637

Tracking Related Inquiries:

Marlys Cappaert
Phone: 541-754-4467

Michelle Gover
Phone: 541-754-4793

04/08/2013 2013 Tracking - Site and Sample Status

8321157557

NRSA 2013/14 TRACKING: BATCH SAMPLES - GROUND (NO ICE)

State of Site Location: ____ Crew: ____ Date Sent: ____ / ____ / ____

Sender: ____ Sender Phone: ____ - ____ - ____

Shipped by: O FedEx O UPS O Hand Delivery Airbill/Tracking Number: ____

Site ID: ____ Visit: O 1 O 2 Date Collected: ____ / ____ / ____

Sample ID	Sample Type	# of Containers	Comments
	BERW		
	BETB		
	PERI		
	VERT		

O GLEC - Traverse City

O STATE LAB (provide details below)

State Lab Name:

State Lab address:

City: State: ZipCode:

Send completed forms to:	Tracking Related Inquiries:
EMAIL: sampletracking@epa.gov	Marlys Cappaert Phone: 541-754-4467
FAX: 541-754-4637	Michelle Gover Phone: 541-754-4793

04/08/2013 2013 Tracking - Batch Ground Shipping

7555080437

NRSA 2013/14 TRACKING: BATCH SAMPLES - OVERNIGHT (DRY ICE)

State of Site Location: ____ Crew: ____ Date Sent: ____ / ____ / ____

Sender: ____ Sender Phone: ____ - ____ - ____

Shipped by: O FedEx O UPS O Hand Delivery Airbill/Tracking Number: ____

Site ID: ____ Visit: O 1 O 2 Date Collected: ____ / ____ / ____

Sample ID	Sample Type	# of Containers	Comments
	ENTE		
	MICX		
	FPLG		

O GLEC - Traverse City

O STATE LAB (provide details below)

State Lab Name:

State Lab address:

City: State: ZipCode:

Send completed forms to:	Tracking Related Inquiries:
EMAIL: sampletracking@epa.gov	Marlys Cappaert Phone: 541-754-4467
FAX: 541-754-4637	Michelle Gover Phone: 541-754-4793

04/08/2013 2013 Tracking - Batch Overnight

5286538209

NRSA 2013/14 TRACKING: WHOLE FISH TISSUE - OVERNIGHT (DRY ICE)

State of Site Location: _____ Crew: _____ Date Sent: ____ / ____ / _____

Sender: _____ Sender Phone: _____ - _____ - _____

Shipped by: ○ FedEx ○ UPS ○ Hand Delivery Airbill/Tracking Number: _____

Site ID: _____ Visit: ○ 1 ○ 2 Date Collected: ____ / ____ / _____

SAMPLE ID: _____ ○ WADEABLE ○ BOATABLE

○ FISH ARE ALL THE SAME SPECIES ○ FISH ALL WITHIN 75% OF LARGEST SPECIMEN

	Common Name	Total Length (mm)	Frozen	Comment
.01			○ Y	
.02			○ Y	
.03			○ Y	
.04			○ Y	
.05			○ Y	
.06*			○ Y	
.07*			○ Y	
.08*			○ Y	
.09*			○ Y	
.10*			○ Y	

*Additional specimens for smaller fish species to ensure sufficient tissue is available for chemical analysis of fillet tissue.

Lab	Send completed forms to:	Tracking Related Inquiries:
Attn: Michael Arbaugh c/o Microbac Laboratories 2101 Van Deman Street Baltimore, MD 21224 410-633-1800	**EMAIL:** sampletracking@epa.gov **FAX:** 541-754-4637	Marlys Cappaert Phone: 541-754-4467 Michelle Gover Phone: 541-754-4793

04/08/2013 2013 Tracking - Fish Tissue Fillet

4511567874

NRSA 2013/14 TRACKING: FIELD FORMS

Sender: _____ Sender Phone: ___ - ___ - ____

State of Site Location: ___ Crew: _____

Shipped By: O FedEx O UPS O Hand Delivery Date Sent: ___ ___ ____

Airbill/Tracking Number: _____

Site ID	Date Sample Collected MM/DD/YYYY	Visit	Comments
		O 1 O 2	
		O 1 O 2	
		O 1 O 2	
		O 1 O 2	
		O 1 O 2	
		O 1 O 2	
		O 1 O 2	
		O 1 O 2	
		O 1 O 2	
		O 1 O 2	
		O 1 O 2	
		O 1 O 2	
		O 1 O 2	
		O 1 O 2	
		O 1 O 2	
		O 1 O 2	
		O 1 O 2	
		O 1 O 2	
		O 1 O 2	

Packet Lab	Completed by Lab	Send completed forms to:	Tracking Related Inquiries:
Attn: Marlys Cappaert c/o USEPA - WED Division 200 SW 35th St Corvallis, OR 97333 Email: cappaert.marlys@epa.gov	Date Received: ____/____/ _____ Received by: _____	**EMAIL:** sampletracking@epa.gov **FAX:** 541-754-4637	Marlys Cappaert Phone: 541-754-4467 Michelle Gover Phone: 541-754-4793

04/08/2013 2013 Tracking - PACKS 0309401782

CHEMISTRY (CHEM)
Site ID: _____
Date: _____/_____/201__ Visit #: O1 O2
990000

WATER COLUMN CHLOROPHYLL (CHLA)
Site ID: _____
Date: _____/_____/201__ Visit #: O1 O2
Volume Filtered: _____mL
990001

PERIPHYTON ASSEMBLAGE ID (PERI)
Site ID: _____
Date: _____/_____/201__ Visit #: O1 O2
Composite Volume: _____mL
990002

PERIPHYTON CHLOROPHYLL (PCHL)
Site ID: _____
Date: _____/_____/201__ Visit #: O1 O2
Volume Filtered: _____mL
990003

PERIPHYTON BIOMASS (PBIO)
Site ID: _____
Date: _____/_____/201__ Visit #: O1 O2
Volume Filtered: _____mL
990004

ALGAL TOXIN (MICX)
Site ID: _____
Date: _____/_____/201__ Visit #: O1 O2
Volume Collected: _____mL
990005

BENTHIC MACROINVERTEBRATES (BERW)
Site ID: _____
Date: _____/_____/201__ Visit #: O1 O2
Jar 1 of ____
990006

BENTHIC MACROINVERTEBRATES (BETB)
Site ID: _____
Date: _____/_____/201__ Visit #: O1 O2
Jar 1 of ____
990007

FISH TISSUE PLUG (FPLG)
Site ID: _____
Date: _____/_____/201__ Visit #: O1 O2
990008

QA VOUCHER (VERT)
Site ID: _____
Date: _____/_____/201__ Visit #: O1 O2
990009

UNK/RNG VOUCHER (VERT)
Site ID: _____
Date: _____/_____/201__ Visit #: O1 O2

Sample Type: _____
Site ID: _____
Date: _____/_____/201__ Visit #: O1 O2
Sample ID: _____

Sample Type: _____
Site ID: _____
Date: _____/_____/201__ Visit #: O1 O2
Sample ID: _____

Sample Type: _____
Site ID: _____
Date: _____/_____/201__ Visit #: O1 O2
Sample ID: _____

QA FISH VOUCHER (VERT) Site ID: _____ ___ / ___ / 201__ 990009		QA FISH VOUCHER (VERT) Site ID: _____ ___ / ___ / 201__ 990009	
FISH – BAG TAG: 41 990009	FISH – BAG TAG: 42 990009	FISH – BAG TAG: 43 990009	FISH – BAG TAG: 44 990009
FISH – BAG TAG: 37 990009	FISH – BAG TAG: 38 990009	FISH – BAG TAG: 39 990009	FISH – BAG TAG: 40 990009
FISH – BAG TAG: 33 990009	FISH – BAG TAG: 34 990009	FISH – BAG TAG: 35 990009	FISH – BAG TAG: 36 990009
FISH – BAG TAG: 29 990009	FISH – BAG TAG: 30 990009	FISH – BAG TAG: 31 990009	FISH – BAG TAG: 32 990009
FISH – BAG TAG: 25 990009	FISH – BAG TAG: 26 990009	FISH – BAG TAG: 27 990009	FISH – BAG TAG: 28 990009
FISH – BAG TAG: 21 990009	FISH – BAG TAG: 22 990009	FISH – BAG TAG: 23 990009	FISH – BAG TAG: 24 990009
FISH – BAG TAG: 17 990009	FISH – BAG TAG: 18 990009	FISH – BAG TAG: 19 990009	FISH – BAG TAG: 20 990009
FISH – BAG TAG: 13 990009	FISH – BAG TAG: 14 990009	FISH – BAG TAG: 15 990009	FISH – BAG TAG: 16 990009
FISH – BAG TAG: 09 990009	FISH – BAG TAG: 10 990009	FISH – BAG TAG: 11 990009	FISH – BAG TAG: 12 990009
FISH – BAG TAG: 05 990009	FISH – BAG TAG: 06 990009	FISH – BAG TAG: 07 990009	FISH – BAG TAG: 08 990009
FISH – BAG TAG: 01 990009	FISH – BAG TAG: 02 990009	FISH – BAG TAG: 03 990009	FISH – BAG TAG: 04 990009

FISH VOUCHER – UNK/RNG Site ID: _____ ___ / ___ / 201__		FISH VOUCHER – UNK/RNG Site ID: _____ ___ / ___ / 201__	
FISH – BAG TAG: 41	FISH – BAG TAG: 42	FISH – BAG TAG: 43	FISH – BAG TAG: 44
FISH – BAG TAG: 37	FISH – BAG TAG: 38	FISH – BAG TAG: 39	FISH – BAG TAG: 40
FISH – BAG TAG: 33	FISH – BAG TAG: 34	FISH – BAG TAG: 35	FISH – BAG TAG: 36
FISH – BAG TAG: 29	FISH – BAG TAG: 30	FISH – BAG TAG: 31	FISH – BAG TAG: 32
FISH – BAG TAG: 25	FISH – BAG TAG: 26	FISH – BAG TAG: 27	FISH – BAG TAG: 28
FISH – BAG TAG: 21	FISH – BAG TAG: 22	FISH – BAG TAG: 23	FISH – BAG TAG: 24
FISH – BAG TAG: 17	FISH – BAG TAG: 18	FISH – BAG TAG: 19	FISH – BAG TAG: 20
FISH – BAG TAG: 13	FISH – BAG TAG: 14	FISH – BAG TAG: 15	FISH – BAG TAG: 16
FISH – BAG TAG: 09	FISH – BAG TAG: 10	FISH – BAG TAG: 11	FISH – BAG TAG: 12
FISH – BAG TAG: 05	FISH – BAG TAG: 06	FISH – BAG TAG: 07	FISH – BAG TAG: 08
FISH – BAG TAG: 01	FISH – BAG TAG: 02	FISH – BAG TAG: 03	FISH – BAG TAG: 04

Filter : 1 Vol. Filt: _____ mL 990010	Filter : 1 Vol. Filt: _____ mL 990030	Filter : 1 Vol. Filt: _____ mL 990050	Filter : 1 Vol. Filt: _____ mL 990070	Filter : 1 Vol. Filt: _____ mL 990090
Filter : 2 Vol. Filt: _____ mL 990010	Filter : 2 Vol. Filt: _____ mL 990030	Filter : 2 Vol. Filt: _____ mL 990050	Filter : 2 Vol. Filt: _____ mL 990070	Filter : 2 Vol. Filt: _____ mL 990090
Filter : Blank Vol. Filt: _____ mL 990010	Filter : Blank Vol. Filt: _____ mL 990030	Filter : Blank Vol. Filt: _____ mL 990050	Filter : Blank Vol. Filt: _____ mL 990070	Filter : Blank Vol. Filt: _____ mL 990090
Filter : 1 Vol. Filt: _____ mL 990110	Filter : 1 Vol. Filt: _____ mL 990130	Filter : 1 Vol. Filt: _____ mL 990150	Filter : 1 Vol. Filt: _____ mL 990170	Filter : 1 Vol. Filt: _____ mL 990190
Filter : 2 Vol. Filt: _____ mL 990110	Filter : 2 Vol. Filt: _____ mL 990130	Filter : 2 Vol. Filt: _____ mL 990150	Filter : 2 Vol. Filt: _____ mL 990170	Filter : 2 Vol. Filt: _____ mL 990190
Filter : Blank Vol. Filt: _____ mL 990110	Filter : Blank Vol. Filt: _____ mL 990130	Filter : Blank Vol. Filt: _____ mL 990150	Filter : Blank Vol. Filt: _____ mL 990170	Filter : Blank Vol. Filt: _____ mL 990190
Filter : 1 Vol. Filt: _____ mL 990210	Filter : 1 Vol. Filt: _____ mL 990230	Filter : 1 Vol. Filt: _____ mL 990250	Filter : 1 Vol. Filt: _____ mL 990270	Filter : 1 Vol. Filt: _____ mL 990290
Filter : 2 Vol. Filt: _____ mL 990210	Filter : 2 Vol. Filt: _____ mL 990230	Filter : 2 Vol. Filt: _____ mL 990250	Filter : 2 Vol. Filt: _____ mL 990270	Filter : 2 Vol. Filt: _____ mL 990290
Filter : Blank Vol. Filt: _____ mL 990210	Filter : Blank Vol. Filt: _____ mL 990230	Filter : Blank Vol. Filt: _____ mL 990250	Filter : Blank Vol. Filt: _____ mL 990270	Filter : Blank Vol. Filt: _____ mL 990290
Filter : 1 Vol. Filt: _____ mL 990310	Filter : 1 Vol. Filt: _____ mL 990330	Filter : 1 Vol. Filt: _____ mL 990350	Filter : 1 Vol. Filt: _____ mL 990370	Filter : 1 Vol. Filt: _____ mL 990390
Filter : 2 Vol. Filt: _____ mL 990310	Filter : 2 Vol. Filt: _____ mL 990330	Filter : 2 Vol. Filt: _____ mL 990350	Filter : 2 Vol. Filt: _____ mL 990370	Filter : 2 Vol. Filt: _____ mL 990390
Filter : Blank Vol. Filt: _____ mL 990310	Filter : Blank Vol. Filt: _____ mL 990330	Filter : Blank Vol. Filt: _____ mL 990350	Filter : Blank Vol. Filt: _____ mL 990370	Filter : Blank Vol. Filt: _____ mL 990390
Filter : 1 Vol. Filt: _____ mL 990410	Filter : 1 Vol. Filt: _____ mL 990430	Filter : 1 Vol. Filt: _____ mL 990450	Filter : 1 Vol. Filt: _____ mL 990470	Filter : 1 Vol. Filt: _____ mL 990490
Filter : 2 Vol. Filt: _____ mL 990410	Filter : 2 Vol. Filt: _____ mL 990430	Filter : 2 Vol. Filt: _____ mL 990450	Filter : 2 Vol. Filt: _____ mL 990470	Filter : 2 Vol. Filt: _____ mL 990490
Filter : Blank Vol. Filt: _____ mL 990410	Filter : Blank Vol. Filt: _____ mL 990430	Filter : Blank Vol. Filt: _____ mL 990450	Filter : Blank Vol. Filt: _____ mL 990470	Filter : Blank Vol. Filt: _____ mL 990490
Filter : Vol. Filt: _____ mL	Filter : Vol. Filt: _____ mL	Filter : Vol. Filt: _____ mL	Filter : Vol. Filt: _____ mL	Filter : Vol. Filt: _____ mL
Filter : Vol. Filt: _____ mL	Filter : Vol. Filt: _____ mL	Filter : Vol. Filt: _____ mL	Filter : Vol. Filt: _____ mL	Filter : Vol. Filt: _____ mL


ENTEROCOCCI (ENTE) - BAG
Site ID: _____
Date: ____/____/201__
Visit #: O1 O2
Vol. Filt: 1 ____ mL 2 ____ mL
990010
990030
990050
990070
990090
990110
990130
990150
990170
990190
990210
990230
990250
990270
990290
990310
990330
990350
990370
990390
990410
990430
990450
990470
990490
990510
990530
990550
990570
990590
990610
990630
990650
990670
990690
990710
990730
990750
990770
990790
990810
990830
990850
990870
990890
990910
990930
990950
990970
990990
990010
990030
990050
990070
990090
990110
990130
990150
990170
990190
DRAFT - DO NOT USE IN FIELD

BENTHOS – EXTRA JAR
Site ID: ________________
Date: _____/_____/201__ Visit #: O1 O2
SAMPLE ID: ____________

BENTHOS – EXTRA JAR
Site ID: ________________
Date: _____/_____/201__ Visit #: O1 O2
SAMPLE ID: ____________

BENTHOS – EXTRA JAR
Site ID: ________________
Date: _____/_____/201__ Visit #: O1 O2
SAMPLE ID: ____________

BENTHOS – EXTRA JAR
Site ID: ________________
Date: _____/_____/201__ Visit #: O1 O2
SAMPLE ID: ____________

BENTHOS – EXTRA JAR
Site ID: ________________
Date: _____/_____/201__ Visit #: O1 O2
SAMPLE ID: ____________

BENTHOS – EXTRA JAR
Site ID: ________________
Date: _____/_____/201__ Visit #: O1 O2
SAMPLE ID: ____________

BENTHOS – EXTRA JAR
Site ID: ________________
Date: _____/_____/201__ Visit #: O1 O2
SAMPLE ID: ____________

BENTHOS – EXTRA JAR
Site ID: ________________
Date: _____/_____/201__ Visit #: O1 O2
SAMPLE ID: ____________

BENTHOS – EXTRA JAR
Site ID: ________________
Date: _____/_____/201__ Visit #: O1 O2
SAMPLE ID: ____________

BENTHOS – EXTRA JAR
Site ID: ________________
Date: _____/_____/201__ Visit #: O1 O2
SAMPLE ID: ____________

BENTHOS – EXTRA JAR
Site ID: ________________
Date: _____/_____/201__ Visit #: O1 O2
SAMPLE ID: ____________

BENTHOS – EXTRA JAR
Site ID: ________________
Date: _____/_____/201__ Visit #: O1 O2
SAMPLE ID: ____________

BENTHOS – EXTRA JAR
Site ID: ________________
Date: _____/_____/201__ Visit #: O1 O2
SAMPLE ID: ____________

BENTHOS – EXTRA JAR
Site ID: ________________
Date: _____/_____/201__ Visit #: O1 O2
SAMPLE ID: ____________

Benthos Composite Sample

Site ID: ______________________

Site Name: ____________________

Date: ____/____/201__ Visit #: O1 O2

Sampler Type: _________________

Collector(s) ___________________

Number of Stations: ____________

SAMPLE ID: _________________

Benthos Composite Sample

Site ID: ______________________

Site Name: ____________________

Date: ____/____/201__ Visit #: O1 O2

Sampler Type: _________________

Collector(s) ___________________

Number of Stations: ____________

SAMPLE ID: _________________

Benthos Composite Sample

Site ID: ______________________

Site Name: ____________________

Date: ____/____/201__ Visit #: O1 O2

Sampler Type: _________________

Collector(s) ___________________

Number of Stations: ____________

SAMPLE ID: _________________

Benthos Composite Sample

Site ID: ______________________

Site Name: ____________________

Date: ____/____/201__ Visit #: O1 O2

Sampler Type: _________________

Collector(s) ___________________

Number of Stations: ____________

SAMPLE ID: _________________

Benthos Composite Sample

Site ID: ______________________

Site Name: ____________________

Date: ____/____/201__ Visit #: O1 O2

Sampler Type: _________________

Collector(s) ___________________

Number of Stations: ____________

SAMPLE ID: _________________

Benthos Composite Sample

Site ID: ______________________

Site Name: ____________________

Date: ____/____/201__ Visit #: O1 O2

Sampler Type: _________________

Collector(s) ___________________

Number of Stations: ____________

SAMPLE ID: _________________

Benthos Composite Sample

Site ID: ______________________

Site Name: ____________________

Date: ____/____/201__ Visit #: O1 O2

Sampler Type: _________________

Collector(s) ___________________

Number of Stations: ____________

SAMPLE ID: _________________

Benthos Composite Sample

Site ID: ______________________

Site Name: ____________________

Date: ____/____/201__ Visit #: O1 O2

Sampler Type: _________________

Collector(s) ___________________

Number of Stations: ____________

SAMPLE ID: _________________

FISH TISSUE FILLET (FTIS)
Site ID: _____
Date: _____/_____/201__ Visit #: O1 O2
990011.1

FISH TISSUE FILLET (FTIS)
Site ID: _____
Date: _____/_____/201__ Visit #: O1 O2
990011.2

FISH TISSUE FILLET (FTIS)
Site ID: _____
Date: _____/_____/201__ Visit #: O1 O2
990011.3

FISH TISSUE FILLET (FTIS)
Site ID: _____
Date: _____/_____/201__ Visit #: O1 O2
990011.4

FISH TISSUE FILLET (FTIS)
Site ID: _____
Date: _____/_____/201__ Visit #: O1 O2
990011.5

FISH TISSUE FILLET (FTIS) - BAG
Site ID: _____
Date: _____/_____/201__ Visit #: O1 O2
990011

FISH TISSUE FILLET (FTIS)
Site ID: _____
Date: _____/_____/201__ Visit #: O1 O2
990031.1

FISH TISSUE FILLET (FTIS)
Site ID: _____
Date: _____/_____/201__ Visit #: O1 O2
990031.2

FISH TISSUE FILLET (FTIS)
Site ID: _____
Date: _____/_____/201__ Visit #: O1 O2
990031.3

FISH TISSUE FILLET (FTIS)
Site ID: _____
Date: _____/_____/201__ Visit #: O1 O2
990031.4

FISH TISSUE FILLET (FTIS)
Site ID: _____
Date: _____/_____/201__ Visit #: O1 O2
990031.5

FISH TISSUE FILLET (FTIS) - BAG
Site ID: _____
Date: _____/_____/201__ Visit #: O1 O2
990031

FISH TISSUE FILLET (FTIS) - EXTRA
Site ID: ________________
Date: _____/_____/201__ Visit #: O1 O2
Bag ____ of _____
SAMPLE ID __________

FISH TISSUE FILLET (FTIS) - EXTRA
Site ID: ________________
Date: _____/_____/201__ Visit #: O1 O2
Bag ____ of _____
SAMPLE ID __________

FISH TISSUE FILLET (FTIS) - EXTRA
Site ID: ________________
Date: _____/_____/201__ Visit #: O1 O2
Bag ____ of _____
SAMPLE ID __________

FISH TISSUE FILLET (FTIS) - EXTRA
Site ID: ________________
Date: _____/_____/201__ Visit #: O1 O2
Bag ____ of _____
SAMPLE ID __________

FISH TISSUE FILLET (FTIS) - EXTRA
Site ID: ________________
Date: _____/_____/201__ Visit #: O1 O2
Bag ____ of _____
SAMPLE ID __________

FISH TISSUE FILLET (FTIS) - EXTRA
Site ID: ________________
Date: _____/_____/201__ Visit #: O1 O2
Bag ____ of _____
SAMPLE ID __________

FISH TISSUE FILLET (FTIS) - EXTRA
Site ID: ________________
Date: _____/_____/201__ Visit #: O1 O2
Bag ____ of _____
SAMPLE ID __________

FISH TISSUE FILLET (FTIS) - EXTRA
Site ID: ________________
Date: _____/_____/201__ Visit #: O1 O2
Bag ____ of _____
SAMPLE ID __________

FISH TISSUE FILLET (FTIS) - EXTRA
Site ID: ________________
Date: _____/_____/201__ Visit #: O1 O2
Bag ____ of _____
SAMPLE ID __________

FISH TISSUE FILLET (FTIS) - EXTRA
Site ID: ________________
Date: _____/_____/201__ Visit #: O1 O2
Bag ____ of _____
SAMPLE ID __________

FISH TISSUE FILLET (FTIS) - EXTRA
Site ID: ________________
Date: _____/_____/201__ Visit #: O1 O2
Bag ____ of _____
SAMPLE ID __________

FISH TISSUE FILLET (FTIS) - EXTRA
Site ID: ________________
Date: _____/_____/201__ Visit #: O1 O2
Bag ____ of _____
SAMPLE ID __________

FISH TISSUE FILLET (FTIS) - EXTRA
Site ID: ________________
Date: _____/_____/201__ Visit #: O1 O2
Bag ____ of _____
SAMPLE ID __________

FISH TISSUE FILLET (FTIS) - EXTRA
Site ID: ________________
Date: _____/_____/201__ Visit #: O1 O2
Bag ____ of _____
SAMPLE ID __________

Appendix C: Shipping Guidelines

Tracking Forms

If you have access to a computer, fill out the **electronic tracking forms (fillable PDF versions)**

- Be careful to fill out all information accurately and completely
- Print a versions of the form to include in the cooler
- If you do not have a printer, include the hand-written paper form in the cooler

Forms

1 - Tracking and Sample Status – WRS or State Water Chemistry Lab

- This form is filled out for the samples that are shipped immediately after each sampling event (water chemistry, Periphyton Biomass, and both chlorophyll samples)
- All of these samples will go together in one cooler to the EPA Corvallis lab or to your State water chemistry lab (if your State has been approved for the NRSA)
- Save form according to the file naming convention on the bottom of form
- Email to address on bottom of form and print form to include in the shipping cooler

**Emailing the electronic WRS form serves as the "status report" for that sampling event*

2 - Tracking (Batched and Retained Samples) - GLEC

- BATCHED samples are held & shipped within 1-2 weeks (depending on the sample type). Send form when SHIPPED.
- RETAINED samples are stored over a month at a holding facility. Send form when COLLECTED **and** when SHIPPED
- Do not combine both BATCHED and RETAINED samples on the same form
- Use one tracking form for each site and for each lab
- Samples listed on tracking form should exactly match contents of cooler
- Save form according to the file naming convention on the bottom of form
- Email to address on bottom of form and print form to include in the shipping cooler

3 - Tracking (whole fish tissue) – Microbac Laboratories

- A subset of sites will be sampled for whole fish tissue
- Only the whole fish samples will go to the EPA NERL Cincinnati lab
- Save form according to the file naming convention on the bottom of form
- Email to address on bottom of form and print form to include in the shipping cooler

If you cannot use a computer before shipping:

- Fill out the paper version of the appropriate tracking form(s)
- Notify the Information Management Center (contact info on bottom of form) – FAX form or leave voice message with ALL info from the form
- Include the form in the shipping cooler
- Samples listed on tracking form should exactly match contents of cooler
- Make sure to FAX or leave a voice message BEFORE the form is sealed in the cooler!

Status Report

- After each site, the Field Crew Leader must file a status report with the Information Management (IM) Center and the Field Logistics Coordinator (FLC) to track visits/samples and to describe activities, problems, and requests
- Emailing the electronic WRS form serves as the status report to both IM and FLC!
- If the form cannot be emailed, faxing or phoning the information serves as the status report.

SHIPPING GUIDELINES

Before shipping, it is very important to preserve each sample as directed in the sample collection portion of this Field Operations Manual.

- Preserve the samples as specified for each indicator before shipping (Fig. C-1).
- Be aware of the holding times for each type of sample (Table C-1):
  - Water chemistry samples must be shipped within 24 hours of collection.
  - Chlorophyll-*a* and periphyton biomass samples have longer holding times, but will be sent with the water chemistry samples since they are going to the same laboratory.
  - Enterococci samples must be filtered and frozen on dry ice within 6 hours of collection
  - Fish tissue samples (plugs and whole fish) must be frozen on dry ice as soon as possible (hold on wet ice until freezing on dry ice if needed).
  - Microcystin samples should be held on wet ice in the field and frozen upon return to lab, office or hotel.
  - Fish voucher specimens can be held on wet ice until being preserved in formalin in the field or laboratory. Preserve samples ASAP.
  - The remaining samples must be preserved immediately upon collection; they may then be sent in batches to the appropriate laboratory.

NRSA 2013-2014 Shipping Summary

"WRS" Samples
(1) Cubitainer (4 L)
CHEM
(3) filters in centrifuge tubes (50 mL), in zip-top bag
CHLA
PBIO
PCHL

Pack 1 site's worth of samples in lined cooler with ice in bags

SHIP WITHIN 24 HOURS (MON-FRI)

FedEx Express

PRIORITY OVERNIGHT

Non-Chilled Samples (Batched) – per site
(1 or more) 1 L wide-mouth bottle
BERW (wadeable)
BETB (non-wadeable)
(1) Centrifuge tube (screw-top, 50-mL)
PERI
(1 or more) 1 L wide-mouth bottle
VERT (*at voucher sites only*)

Pack 3-5 site's worth of samples in lined cooler with NO ICE

SHIP EVERY 2 WEEKS ANYTIME

FedEx Ground

GROUND

Frozen Samples (Batched) – per site
(1) HDPE bottle (500 mL, white, wide-mouth)
MICX
(2) Filters in centrifuge tubes in bag (*plus blank if revisit site V1*)
ENTE
(2) Fish Tissue Plugs in 1 vial
FPLG

Pack 3-5 site's worth of samples in dry ice box-cooler with **dry ice**

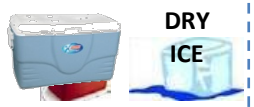
SHIP WEEKLY MON-FRI

FedEx Express

PRIORITY OVERNIGHT

Frozen Whole Fish Tissue Samples* (Batched) – per site
(5) Fish in Large plastic (composite) bag(s)
FTIS

Pack 1-3 site's worth of samples in cooler with **dry ice**



SHIP MON-THURS
(NO Saturday Delivery)

FedEx Express

PRIORITY OVERNIGHT

Completed Data Packs (Batched)
All data forms from a site, reviewed for completeness, legibility and accuracy

Make copies or scans as backup

Organize as specified in the FOM

Place in envelope with tracking form

SHIP ANYTIME

FedEx Express

*Whole fish samples are collected at a subset of pre-selected sites

Figure C-1. Sample packaging and shipping summary.

Appen

Table C 1 Holding Times for Samples

** Fish Vouchers and Whole Fish Tissue is collected at select sites only*

SAMPLE		PRESERVATIVE	PACKAGING FOR SHIPMENT	HOLDING TIME
WRS	Water Chemistry	Wet ice	Ship in cooler with wet ice	24 hours; ship these samples together (WRS lab - Corvallis or State approved lab
	Chlorophyll-*a*	Dry ice in field		
	Periphyton - Chlorophyll-*a*	Dry ice in field		
	Periphyton - Biomass	Dry ice in field		
NON-CHILLED BATCHED	Periphyton - ID	Formalin/Formaldehyde	Ship in cooler or sturdy container	Batch; ship at least every 2 weeks to GLEC
	Benthic macroinvertebrates	95% Ethanol		
	Fish Vouchers*	Formalin		
FROZEN BATCHED	Microcystins	Wet ice in field, Freeze as soon as possible	Ship in dry ice box provided with DRY ICE	Batch; ship weekly to GLEC lab Batch
	Enterococci	Dry ice in field; hold in freezer; MUST be filtered & frozen within 6 hours of collection Hold in freezer or on dry ice		
	Fish Tissue Plugs	Dry ice in field; Hold in freezer or on dry ice		
WHOLE FISH	Whole Fish Tissue Sample*	Dry ice in field; Hold in freezer	Ship in cooler provided with DRY ICE	Batch; ship weekly to Microbac lab

When wet ice is used for shipment (water chemistry, chlorophyll-a, periphyton biomass):

- Ensure that the ice is fresh before shipment; pack the entire cooler full with ice.
- Line the cooler with a large, 30-gallon plastic bag.
- Contain the ice separately within numerous 1-gallon self-sealing plastic bags. Double-bag the ice.
- Use white or clear bags and label with a dark indelible marker. Label all bags of ice as "ICE" to prevent misidentification by couriers of any water leakage as a possible hazardous material spill.
- Place bagged samples and bags of ice inside the cooler liner and seal the liner.
- Secure the cooler with strapping tape.

When dry ice is used for shipping (frozen batched and whole fish tissue and Enterococci samples):

- Indicate amount of dry ice on shipping airbill.
- Label box or cooler with a Class 9 Dangerous Goods label.
- Secure the box or cooler with strapping tape
- See "Dry Ice Shipping Protocols" at the end of this Appendix.

When shipping samples preserved with ETOH or Formalin (non-chilled batched samples):

- Close the lid of each container tightly and securely with electrical tape
- Line the cooler with a large, 30-gallon plastic bag.
- Place sealed sample containers inside cooler liner
- Surround the jars with crumpled newspaper, pads, or other absorbent material
- Seal the cooler liner securely with zip tie.
- Secure the cooler with strapping tape.

***NOTE**: Federal regulations and FedEx rules allow for Ground shipping of certain quantities of flammable liquids WITHOUT the need for special certifications and labeling. Flammable liquids may NOT be shipped via air carrier unless shipper is trained and qualified to do so and specific documentation and labeling requirements are met.*

The Code of Federal Regulations (49 CFR Section 173.150) lists the exceptions which allow shipping of flammable liquids via ground carrier without labeling or special certifications. Ethanol and formalin can be considered to be in either Packaging Group 2 or 3, so we use the more stringent PG 2 as our guideline. The limited quantity exclusion allows ground shipping of PG 2 flammable liquids provided that the individual containers inside the package are not over 1.0 liters each, that the gross weight of the package does not exceed 66 pounds, and that the outer packaging is a sturdy container. Please ensure that your shipment meets these criteria to ensure the legal Ground shipment of these samples.

WATER CHEMISTRY, CHLOROPHYL-*a (from Water Column)*, Chlorophyll-a (from periphyton) and Periphyton Biomass

- **Water Chemistry**
  Stored in a 4-L cube container
  - Confirm that the cube container is labeled and covered with clear tape.
  - Ensure that air is purged from the container
  - Seal lid with electrical tape
  - Place the cube container in a second bag inside the cooler liner.

- **Water Column Chlorophyll-*a,* Periphyton Chlorophyll-a and Periphyton Biomass**
  Three filters each stored in a 50-mL steam-top centrifuge tube wrapped with aluminum foil
  Filters are initially frozen on dry ice in the field, then shipped on wet ice to WRS lab or State approved lab.
  - Confirm that the labels with sample IDs are completed and covered with clear tape.
  - Close lids tightly (turn an additional ¼ turn past the point at which initial resistance is met)
  - Seal lids with electrical tape
  - Place the centrifuge tubes in a small self-sealing plastic bag.
  - Place the bag in a 1-gal self-sealing plastic bag and place inside cooler liner with water chemistry sample.

PERIPHYTON ID SAMPLES

ID samples preserved with formalin or formaldehyde and sealed at the site.

- Confirm that the label with sample ID is completed and covered with clear tape.
- Close lids tightly (turn an additional ¼ turn past the point at which initial resistance is met)
- Seal lids with electrical tape
- Place the centrifuge tube in a small self-sealing plastic bag.
- Place the bagged samples in the appropriate shipping container.
- Surround the jars with crumpled newspaper, pads, or other absorbent material.
- Samples can be held and shipped in batches to the laboratory for analysis.

BENTHIC INVERTEBRATE SAMPLES

Preserved in 95% ethanol and sealed at the site.

- Confirm that the label with sample ID is completed and covered with clear tape.
- Check to make sure jars are sealed with electrical tape.
- Place3-5 sites worth of jars in each cooler with other preserved samples.
- Surround the jars with crumpled newspaper, pads, or other absorbent material.
- Samples can be held and shipped in batches to the laboratory for analysis.

WHOLE FISH TISSUE SAMPLES

The samples need to be frozen as soon as possible after collection.

- Pack the cooler with 50 lbs of dry ice.
- Refer to the DRY ICE SHIPPING PROTOCOLS at the end of this Appendix.
- Samples may be stored on dry ice for a maximum of 24 hours. Sampling teams have the option, depending on site logistics, of:
  - shipping the samples packed on dry ice (50 pounds), via priority overnight delivery so that they arrive at the sample preparation laboratory within 24 hours of sample collection, or
  - freezing the samples within 24 hours of collection at ≤-20°C, and storing the frozen samples until shipment within 1 week of sample collection (frozen samples will be packed on dry ice and shipped to the sample preparation laboratory via priority overnight delivery service).

FISH VOUCHER SAMPLES

Preserved in a laboratory with formalin

- Confirm that the label with sample ID is completed and covered with clear tape.
- Check to make sure jars are sealed with electrical tape.
- Surround the jars with crumpled newspaper, pads, or other absorbent material.
- Samples can be held and shipped in batches to the laboratory for analysis.

ENTEROCOCCI SAMPLES

The sample needs to be filtered and frozen as soon as possible after collection (within 6 hours).

- Confirm that each microcentrifuge tube is labeled and properly sealed.
- Place microcentrifuge tubes from a single site in a padded bag.
- Confirm that the bag is labeled with the appropriate sample ID and covered with clear plastic tape.
- Place the samples in dry ice box with other frozen batched samples.
- Pack the box with 10-15 lbs of dry ice (10 lbs if using dry ice blocks or slices, 15 lbs if using dry ice pellets).
- Refer to the DRY ICE SHIPPING PROTOCOLS at the end of this Appendix.
- Samples can be held frozen and shipped in batches to the laboratory for analysis within one week of collection.

FISH PLUG SAMPLES

The samples need to be frozen as soon as possible after collection.

- Confirm that the label with sample ID is completed and covered with clear tape.
- Check to make sure vial is sealed with electrical tape.
- Refer to the DRY ICE SHIPPING PROTOCOLS at the end of this Appendix.
- Place the samples in dry ice box with other frozen batched samples.
- Pack the box with 10-15 lbs of dry ice (10 lbs if using dry ice blocks or slices, 15 lbs if using dry ice pellets).
- Refer to the DRY ICE SHIPPING PROTOCOLS at the end of this Appendix.
- Samples can be held frozen and shipped in batches to the laboratory for analysis.

MICROCYSTIN SAMPLES

The samples need to be frozen as soon as possible after collection.

- Confirm that the label with sample ID is completed and covered with clear tape.
- Check to make sure bottle is sealed with electrical tape.
- Refer to the DRY ICE SHIPPING PROTOCOLS at the end of this Appendix.
- Place the samples in dry ice box with other frozen batched samples.
- Pack the box with 10-15 lbs of dry ice (10 lbs if using dry ice blocks or slices, 15 lbs if using dry ice pellets).
- Refer to the DRY ICE SHIPPING PROTOCOLS at the end of this Appendix.
- Samples can be held frozen and shipped in batches to the laboratory for analysis.

DRY ICE SHIPPING PROTOCOLS

1. Indicate dry ice on shipping airbill
    - Ensure that Section 1 and Section 3 of the Fed Ex airbill air filled out correctly with Sender and Recipient address and phone number.
    - In Section 4, ensure that "FedEx Priority Overnight" Is checked.
    - In Section 5, check "Other."
    - In Section 6, under "Does this shipment contain dangerous goods?":
        - Check "Yes/Shipper's Declaration not required."
        - Check "Dry Ice," and fill out "_1_ x _(*amt. of dry ice in kg*)_ kg"
2. Label cooler with a Class 9 Dangerous Goods label (available from FedEx) (Fig. C-2).

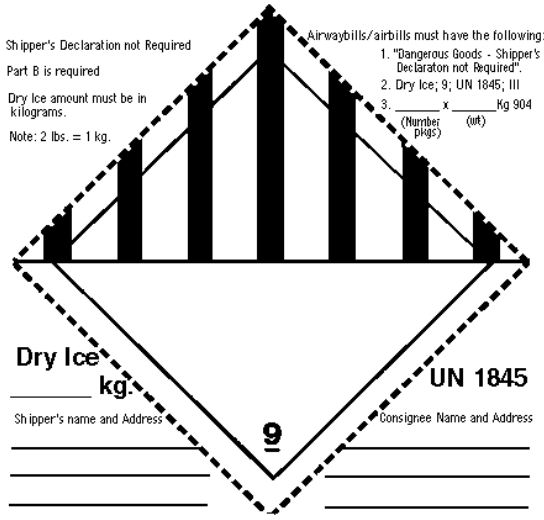


Figure C-2. Class 9 Dangerous Goods lab

- Place the label on the front side of the box/cooler, not the top of the cooler.
- Fill out #3 in the top right hand corner of the label with the same dry ice weight information as in Section 6 of the FedEx airbill.
- Declare the weight of the dry ice again in the lower left hand corner.
- Fill out the Sender ("Shipper") and Recipient ("Consignee") address on the bottom of the label.

3. Secure the box/cooler with strapping tape.
4. Place the completed airbill on the top of the box/cooler.

NOTE: *Not all FedEx locations will accept shipments containing dry ice. Dry ice shipments can be shipped from "FedEx staffed" locations. You can also arrange for a pick-up from your lab or hotel. Dry ice shipments often cannot be shipped from FedEx Kinko's Office and Print Centers® or FedEx Authorized ShipCenter® locations. These types of locations are differentiated on FedEX.com in the "Find FedEx Locations" feature. Please be sure to call in advance to ensure your location will accept the package for shipment.*

TRACKING FORMS

A Tracking Form must be filled out to accompany each sample shipment. Please refer to Appendix B for examples of Tracking Forms completed for both unpreserved and preserved samples. Be very careful to fill in the information correctly and legibly, especially the airbill number, Site ID, and Sample ID numbers. Use the codes on the bottom of the form to indicate sample type. The Tracking Form is to be placed in a self-sealing plastic bag and included inside the shipping container. Before sealing the container, remember to submit the status report (via email) to sampletracking@epa.gov (see Section 2.4.2); you will need the information on the tracking form to fill out the status report form. For retained samples being held longer than 1 month, submit a status report both when the samples are brought to the holding facility AND when they are shipped to the appropriate laboratory. For each shipment, you must fill out a scanable tracking form to include in the cooler and submit the tracking form via email or fax.

Appendix D: Standard Common and Scientific Names of Fish and Amphibians

Table D-1. Standard Common and Scientific Names of Fish

ORDER	FAMILY	SCIENTIFIC NAME	COMMON NAME
Acipenseriformes	Acipenseridae	*Acipenser oxyrinchus*	atlantic sturgeon
Acipenseriformes	Acipenseridae	*Acipenser medirostris*	green sturgeon
Acipenseriformes	Acipenseridae	*Acipenser fulvescens*	lake sturgeon
Acipenseriformes	Acipenseridae	*Acipenser brevirostrum*	shortnose sturgeon
Acipenseriformes	Acipenseridae	*Acipenser transmontanus*	white sturgeon
Acipenseriformes	Acipenseridae	*Scaphirhynchus suttkusi*	alabama sturgeon
Acipenseriformes	Acipenseridae	*Scaphirhynchus albus*	pallid sturgeon
Acipenseriformes	Acipenseridae	*Scaphirhynchus platorynchus*	shovelnose sturgeon
Acipenseriformes	Polyodontidae	*Polyodon spathula*	paddlefish
Amiiformes	Amiidae	*Amia calva*	bowfin
Anguilliformes	Anguillidae	*Anguilla rostrata*	american eel
Anguilliformes	Congridae	*Conger oceanicus*	conger eel
Anguilliformes	Ophichthidae	*Myrophis punctatus*	speckled worm eel
Atheriniformes	Atherinopsidae	*Labidesthes sicculus*	brook silverside
Atheriniformes	Atherinopsidae	*Membras martinica*	rough silverside
Atheriniformes	Atherinopsidae	*Menidia beryllina*	inland silverside
Atheriniformes	Atherinopsidae	*Menidia audens*	mississippi silverside
Atheriniformes	Atherinopsidae	*Menidia extensa*	waccamaw silverside
Atheriniformes	Atherinopsidae	*Menidia menidia*	atlantic silverside
Beloniformes	Belonidae	*Strongylura marina*	atlantic needlefish
Carcharhiniformes	Carcharhinidae	*Carcharhinus leucas*	bull shark
Characiformes	Characidae	*Astyanax mexicanus*	mexican tetra
Clupeiformes	Clupeidae	*Alosa alabamae*	alabama shad
Clupeiformes	Clupeidae	*Alosa pseudoharengus*	alewife
Clupeiformes	Clupeidae	*Alosa sapidissima*	american shad
Clupeiformes	Clupeidae	*Alosa aestivalis*	blueback herring
Clupeiformes	Clupeidae	*Alosa mediocris*	hickory shad
Clupeiformes	Clupeidae	*Alosa chrysochloris*	skipjack herring
Clupeiformes	Clupeidae	*Dorosoma cepedianum*	gizzard shad
Clupeiformes	Clupeidae	*Dorosoma petenense*	threadfin shad
Clupeiformes	Clupeidae	*Harengula jaguana*	scaled sardine
Clupeiformes	Clupeidae	*Opisthonema oglinum*	atlantic thread herring
Clupeiformes	Clupeidae	*Brevoortia patronus*	gulf menhaden
Clupeiformes	Engraulidae	*Anchoa mitchilli*	bay anchovy
Cypriniformes	Catostomidae	*Carpiodes velifer*	highfin carpsucker
Cypriniformes	Catostomidae	*Carpiodes cyprinus*	quillback
Cypriniformes	Catostomidae	*Carpiodes carpio*	river carpsucker
Cypriniformes	Catostomidae	*Catostomus discobolus*	bluehead sucker
Cypriniformes	Catostomidae	*Catostomus columbianus*	bridgelip sucker
Cypriniformes	Catostomidae	*Catostomus clarkii*	desert sucker

ORDER	FAMILY	SCIENTIFIC NAME	COMMON NAME
Cypriniformes	Catostomidae	*Catostomus latipinnis*	flannelmouth sucker
Cypriniformes	Catostomidae	*Catostomus snyderi*	klamath largescale sucker
Cypriniformes	Catostomidae	*Catostomus rimiculus*	klamath smallscale sucker
Cypriniformes	Catostomidae	*Catostomus macrocheilus*	largescale sucker
Cypriniformes	Catostomidae	*Catostomus catostomus*	longnose sucker
Cypriniformes	Catostomidae	*Catostomus microps*	modoc sucker
Cypriniformes	Catostomidae	*Catostomus platyrhynchus*	mountain sucker
Cypriniformes	Catostomidae	*Catostomus fumeiventris*	owens sucker
Cypriniformes	Catostomidae	*Catostomus plebeius*	rio grande sucker
Cypriniformes	Catostomidae	*Catostomus occidentalis*	sacramento sucker
Cypriniformes	Catostomidae	*Catostomus santaanae*	santa ana sucker
Cypriniformes	Catostomidae	*Catostomus insignis*	sonora sucker
Cypriniformes	Catostomidae	*Catostomus tahoensis*	tahoe sucker
Cypriniformes	Catostomidae	*Catostomus ardens*	utah sucker
Cypriniformes	Catostomidae	*Catostomus warnerensis*	warner sucker
Cypriniformes	Catostomidae	*Catostomus commersonii*	white sucker
Cypriniformes	Catostomidae	*Catostomus bernardini*	yaqui sucker
Cypriniformes	Catostomidae	*Chasmistes cujus*	cui-ui
Cypriniformes	Catostomidae	*Chasmistes liorus*	june sucker
Cypriniformes	Catostomidae	*Chasmistes brevirostris*	shortnose sucker
Cypriniformes	Catostomidae	*Chasmistes muriei*	snake river sucker
Cypriniformes	Catostomidae	*Cycleptus elongatus*	blue sucker
Cypriniformes	Catostomidae	*Cycleptus meridionalis*	southeastern blue sucker
Cypriniformes	Catostomidae	*Deltistes luxatus*	lost river sucker
Cypriniformes	Catostomidae	*Erimyzon oblongus*	creek chubsucker
Cypriniformes	Catostomidae	*Erimyzon sucetta*	lake chubsucker
Cypriniformes	Catostomidae	*Erimyzon tenuis*	sharpfin chubsucker
Cypriniformes	Catostomidae	*Hypentelium etowanum*	alabama hog sucker
Cypriniformes	Catostomidae	*Hypentelium nigricans*	northern hog sucker
Cypriniformes	Catostomidae	*Hypentelium roanokense*	roanoke hog sucker
Cypriniformes	Catostomidae	*Ictiobus cyprinellus*	bigmouth buffalo
Cypriniformes	Catostomidae	*Ictiobus niger*	black buffalo
Cypriniformes	Catostomidae	*Ictiobus bubalus*	smallmouth buffalo
Cypriniformes	Catostomidae	*Minytrema melanops*	spotted sucker
Cypriniformes	Catostomidae	*Moxostoma ariommum*	bigeye jumprock
Cypriniformes	Catostomidae	*Moxostoma duquesnei*	black redhorse
Cypriniformes	Catostomidae	*Moxostoma poecilurum*	blacktail redhorse
Cypriniformes	Catostomidae	*Moxostoma cervinum*	blacktip jumprock
Cypriniformes	Catostomidae	*Moxostoma erythrurum*	golden redhorse
Cypriniformes	Catostomidae	*Moxostoma congestum*	gray redhorse
Cypriniformes	Catostomidae	*Moxostoma lachneri*	greater jumprock
Cypriniformes	Catostomidae	*Moxostoma valenciennesi*	greater redhorse

ORDER	FAMILY	SCIENTIFIC NAME	COMMON NAME
Cypriniformes	Catostomidae	*Moxostoma lacerum*	harelip sucker
Cypriniformes	Catostomidae	*Moxostoma austrinum*	mexican redhorse
Cypriniformes	Catostomidae	*Moxostoma collapsum*	notchlip redhorse
Cypriniformes	Catostomidae	*Moxostoma pisolabrum*	pealip redhorse
Cypriniformes	Catostomidae	*Moxostoma carinatum*	river redhorse
Cypriniformes	Catostomidae	*Moxostoma robustum*	robust redhorse
Cypriniformes	Catostomidae	*Moxostoma macrolepidotum*	shorthead redhorse
Cypriniformes	Catostomidae	*Moxostoma anisurum*	silver redhorse
Cypriniformes	Catostomidae	*Moxostoma breviceps*	smallmouth redhorse
Cypriniformes	Catostomidae	*Moxostoma rupiscartes*	striped jumprock
Cypriniformes	Catostomidae	*Moxostoma pappillosum*	v-lip redhorse
Cypriniformes	Catostomidae	*Moxostoma cf. poecilurum*	apalachicola redhorse
Cypriniformes	Catostomidae	*Moxostoma cf. lachneri*	brassy jumprock
Cypriniformes	Catostomidae	*Pantosteus lahontan*	lahontan sucker
Cypriniformes	Catostomidae	*Thoburnia atripinnis*	blackfin sucker
Cypriniformes	Catostomidae	*Thoburnia hamiltoni*	rustyside sucker
Cypriniformes	Catostomidae	*Thoburnia rhothoeca*	torrent sucker
Cypriniformes	Catostomidae	*Xyrauchen texanus*	razorback sucker
Cypriniformes	Cobitidae	*Misgurnus anguillicaudatus*	oriental weatherfish
Cypriniformes	Cyprinidae	*Acrocheilus alutaceus*	chiselmouth
Cypriniformes	Cyprinidae	*Agosia chrysogaster*	longfin dace
Cypriniformes	Cyprinidae	*Campostoma pauciradii*	bluefin stoneroller
Cypriniformes	Cyprinidae	*Campostoma anomalum*	central stoneroller
Cypriniformes	Cyprinidae	*Campostoma oligolepis*	largescale stoneroller
Cypriniformes	Cyprinidae	*Campostoma ornatum*	mexican stoneroller
Cypriniformes	Cyprinidae	*Carassius auratus*	goldfish
Cypriniformes	Cyprinidae	*Clinostomus elongatus*	redside dace
Cypriniformes	Cyprinidae	*Clinostomus funduloides*	rosyside dace
Cypriniformes	Cyprinidae	*Couesius plumbeus*	lake chub
Cypriniformes	Cyprinidae	*Ctenopharyngodon idella*	grass carp
Cypriniformes	Cyprinidae	*Cyprinella callistia*	alabama shiner
Cypriniformes	Cyprinidae	*Cyprinella xaenura*	altamaha shiner
Cypriniformes	Cyprinidae	*Cyprinella leedsi*	bannerfin shiner
Cypriniformes	Cyprinidae	*Cyprinella formosa*	beautiful shiner
Cypriniformes	Cyprinidae	*Cyprinella venusta*	blacktail shiner
Cypriniformes	Cyprinidae	*Cyprinella caerulea*	blue shiner
Cypriniformes	Cyprinidae	*Cyprinella callitaenia*	bluestripe shiner
Cypriniformes	Cyprinidae	*Cyprinella camura*	bluntface shiner
Cypriniformes	Cyprinidae	*Cyprinella pyrrhomelas*	fieryblack shiner
Cypriniformes	Cyprinidae	*Cyprinella chloristia*	greenfin shiner
Cypriniformes	Cyprinidae	*Cyprinella callisema*	ocmulgee shiner
Cypriniformes	Cyprinidae	*Cyprinella lepida*	plateau shiner

ORDER	FAMILY	SCIENTIFIC NAME	COMMON NAME
Cypriniformes	Cyprinidae	*Cyprinella proserpina*	proserpine shiner
Cypriniformes	Cyprinidae	*Cyprinella lutrensis*	red shiner
Cypriniformes	Cyprinidae	*Cyprinella zanema*	santee chub
Cypriniformes	Cyprinidae	*Cyprinella analostana*	satinfin shiner
Cypriniformes	Cyprinidae	*Cyprinella spiloptera*	spotfin shiner
Cypriniformes	Cyprinidae	*Cyprinella whipplei*	steelcolor shiner
Cypriniformes	Cyprinidae	*Cyprinella gibbsi*	tallapoosa shiner
Cypriniformes	Cyprinidae	*Cyprinella labrosa*	thicklip chub
Cypriniformes	Cyprinidae	*Cyprinella trichroistia*	tricolor shiner
Cypriniformes	Cyprinidae	*Cyprinella nivea*	whitefin shiner
Cypriniformes	Cyprinidae	*Cyprinella galactura*	whitetail shiner
Cypriniformes	Cyprinidae	*Cyprinus carpio*	common carp
Cypriniformes	Cyprinidae	*Dionda diaboli*	devils river minnow
Cypriniformes	Cyprinidae	*Dionda nigrotaeniata*	guadalupe roundnose minnow
Cypriniformes	Cyprinidae	*Dionda argentosa*	manantial roundnose minnow
Cypriniformes	Cyprinidae	*Dionda serena*	nueces roundnose minnow
Cypriniformes	Cyprinidae	*Dionda episcopa*	roundnose minnow
Cypriniformes	Cyprinidae	*Eremichthys acros*	desert dace
Cypriniformes	Cyprinidae	*Erimonax monachus*	spotfin chub
Cypriniformes	Cyprinidae	*Erimystax insignis*	blotched chub
Cypriniformes	Cyprinidae	*Erimystax x-punctatus*	gravel chub
Cypriniformes	Cyprinidae	*Erimystax harryi*	ozark chub
Cypriniformes	Cyprinidae	*Erimystax cahni*	slender chub
Cypriniformes	Cyprinidae	*Erimystax dissimilis*	streamline chub
Cypriniformes	Cyprinidae	*Exoglossum maxillingua*	cutlip minnow
Cypriniformes	Cyprinidae	*Exoglossum laurae*	tonguetied minnow
Cypriniformes	Cyprinidae	*Gila alvordensis*	alvord chub
Cypriniformes	Cyprinidae	*Gila orcuttii*	arroyo chub
Cypriniformes	Cyprinidae	*Gila coerulea*	blue chub
Cypriniformes	Cyprinidae	*Gila elegans*	bonytail
Cypriniformes	Cyprinidae	*Gila boraxobius*	borax lake chub
Cypriniformes	Cyprinidae	*Gila nigrescens*	chihuahua chub
Cypriniformes	Cyprinidae	*Gila intermedia*	gila chub
Cypriniformes	Cyprinidae	*Gila nigra*	headwater chub
Cypriniformes	Cyprinidae	*Gila cypha*	humpback chub
Cypriniformes	Cyprinidae	*Gila pandora*	rio grande chub
Cypriniformes	Cyprinidae	*Gila robusta*	roundtail chub
Cypriniformes	Cyprinidae	*Gila ditaenia*	sonora chub
Cypriniformes	Cyprinidae	*Gila crassicauda*	thicktail chub
Cypriniformes	Cyprinidae	*Gila bicolor*	tui chub
Cypriniformes	Cyprinidae	*Gila atraria*	utah chub

ORDER	FAMILY	SCIENTIFIC NAME	COMMON NAME
Cypriniformes	Cyprinidae	*Gila seminuda*	virgin chub
Cypriniformes	Cyprinidae	*Gila purpurea*	yaqui chub
Cypriniformes	Cyprinidae	*Hemitremia flammea*	flame chub
Cypriniformes	Cyprinidae	*Hesperoleucus symmetricus*	california roach
Cypriniformes	Cyprinidae	*Hybognathus hankinsoni*	brassy minnow
Cypriniformes	Cyprinidae	*Hybognathus hayi*	cypress minnow
Cypriniformes	Cyprinidae	*Hybognathus regius*	eastern silvery minnow
Cypriniformes	Cyprinidae	*Hybognathus nuchalis*	mississippi silvery minnow
Cypriniformes	Cyprinidae	*Hybognathus placitus*	plains minnow
Cypriniformes	Cyprinidae	*Hybognathus amarus*	rio grande silvery minnow
Cypriniformes	Cyprinidae	*Hybognathus argyritis*	western silvery minnow
Cypriniformes	Cyprinidae	*Hybopsis amblops*	bigeye chub
Cypriniformes	Cyprinidae	*Hybopsis winchelli*	clear chub
Cypriniformes	Cyprinidae	*Hybopsis hypsinotus*	highback chub
Cypriniformes	Cyprinidae	*Hybopsis lineapunctata*	lined chub
Cypriniformes	Cyprinidae	*Hybopsis amnis*	pallid shiner
Cypriniformes	Cyprinidae	*Hybopsis rubrifrons*	rosyface chub
Cypriniformes	Cyprinidae	*Hypophthalmichthys nobilis*	bighead carp
Cypriniformes	Cyprinidae	*Hypophthalmichthys molitrix*	silver carp
Cypriniformes	Cyprinidae	*Iotichthys phlegethontis*	least chub
Cypriniformes	Cyprinidae	*Lavinia exilicauda*	hitch
Cypriniformes	Cyprinidae	*Lepidomeda vittata*	little colorado spinedace
Cypriniformes	Cyprinidae	*Lepidomeda altivelis*	pahranagat spinedace
Cypriniformes	Cyprinidae	*Lepidomeda mollispinis*	virgin spinedace
Cypriniformes	Cyprinidae	*Lepidomeda albivallis*	white river spinedace
Cypriniformes	Cyprinidae	*Leuciscus idus*	ide
Cypriniformes	Cyprinidae	*Luxilus zonistius*	bandfin shiner
Cypriniformes	Cyprinidae	*Luxilus zonatus*	bleeding shiner
Cypriniformes	Cyprinidae	*Luxilus cardinalis*	cardinal shiner
Cypriniformes	Cyprinidae	*Luxilus cornutus*	common shiner
Cypriniformes	Cyprinidae	*Luxilus cerasinus*	crescent shiner
Cypriniformes	Cyprinidae	*Luxilus pilsbryi*	duskystripe shiner
Cypriniformes	Cyprinidae	*Luxilus chrysocephalus*	striped shiner
Cypriniformes	Cyprinidae	*Luxilus coccogenis*	warpaint shiner
Cypriniformes	Cyprinidae	*Luxilus albeolus*	white shiner
Cypriniformes	Cyprinidae	*Lythrurus atrapiculus*	blacktip shiner
Cypriniformes	Cyprinidae	*Lythrurus roseipinnis*	cherryfin shiner
Cypriniformes	Cyprinidae	*Lythrurus lirus*	mountain shiner
Cypriniformes	Cyprinidae	*Lythrurus snelsoni*	ouachita shiner
Cypriniformes	Cyprinidae	*Lythrurus matutinus*	pinewoods shiner
Cypriniformes	Cyprinidae	*Lythrurus bellus*	pretty shiner
Cypriniformes	Cyprinidae	*Lythrurus umbratilis*	redfin shiner

ORDER	FAMILY	SCIENTIFIC NAME	COMMON NAME
Cypriniformes	Cyprinidae	*Lythrurus fumeus*	ribbon shiner
Cypriniformes	Cyprinidae	*Lythrurus ardens*	rosefin shiner
Cypriniformes	Cyprinidae	*Lythrurus fasciolaris*	scarlet shiner
Cypriniformes	Cyprinidae	*Lythrurus alegnotus*	warrior shiner
Cypriniformes	Cyprinidae	*Macrhybopsis marconis*	burrhead chub
Cypriniformes	Cyprinidae	*Macrhybopsis tetranema*	peppered chub
Cypriniformes	Cyprinidae	*Macrhybopsis australis*	prairie chub
Cypriniformes	Cyprinidae	*Macrhybopsis hyostoma*	shoal chub
Cypriniformes	Cyprinidae	*Macrhybopsis meeki*	sicklefin chub
Cypriniformes	Cyprinidae	*Macrhybopsis storeriana*	silver chub
Cypriniformes	Cyprinidae	*Macrhybopsis aestivalis*	speckled chub
Cypriniformes	Cyprinidae	*Macrhybopsis gelida*	sturgeon chub
Cypriniformes	Cyprinidae	*Margariscus margarita*	pearl dace
Cypriniformes	Cyprinidae	*Meda fulgida*	spikedace
Cypriniformes	Cyprinidae	*Moapa coriacea*	moapa dace
Cypriniformes	Cyprinidae	*Mylocheilus caurinus*	peamouth
Cypriniformes	Cyprinidae	*Mylopharodon conocephalus*	hardhead
Cypriniformes	Cyprinidae	*Mylopharyngodon piceus*	black carp
Cypriniformes	Cyprinidae	*Nocomis platyrhynchus*	bigmouth chub
Cypriniformes	Cyprinidae	*Nocomis leptocephalus*	bluehead chub
Cypriniformes	Cyprinidae	*Nocomis raneyi*	bull chub
Cypriniformes	Cyprinidae	*Nocomis biguttatus*	hornyhead chub
Cypriniformes	Cyprinidae	*Nocomis asper*	redspot chub
Cypriniformes	Cyprinidae	*Nocomis effusus*	redtail chub
Cypriniformes	Cyprinidae	*Nocomis micropogon*	river chub
Cypriniformes	Cyprinidae	*Notemigonus crysoleucas*	golden shiner
Cypriniformes	Cyprinidae	*Notropis girardi*	arkansas river shiner
Cypriniformes	Cyprinidae	*Notropis rupestris*	bedrock shiner
Cypriniformes	Cyprinidae	*Notropis boops*	bigeye shiner
Cypriniformes	Cyprinidae	*Notropis dorsalis*	bigmouth shiner
Cypriniformes	Cyprinidae	*Notropis heterodon*	blackchin shiner
Cypriniformes	Cyprinidae	*Notropis melanostomus*	blackmouth shiner
Cypriniformes	Cyprinidae	*Notropis heterolepis*	blacknose shiner
Cypriniformes	Cyprinidae	*Notropis atrocaudalis*	blackspot shiner
Cypriniformes	Cyprinidae	*Notropis simus*	bluntnose shiner
Cypriniformes	Cyprinidae	*Notropis bifrenatus*	bridle shiner
Cypriniformes	Cyprinidae	*Notropis asperifrons*	burrhead shiner
Cypriniformes	Cyprinidae	*Notropis cahabae*	cahaba shiner
Cypriniformes	Cyprinidae	*Notropis mekistocholas*	cape fear shiner
Cypriniformes	Cyprinidae	*Notropis percobromus*	carmine shiner
Cypriniformes	Cyprinidae	*Notropis wickliffi*	channel shiner
Cypriniformes	Cyprinidae	*Notropis chihuahua*	chihuahua shiner

ORDER	FAMILY	SCIENTIFIC NAME	COMMON NAME
Cypriniformes	Cyprinidae	*Notropis potteri*	chub shiner
Cypriniformes	Cyprinidae	*Notropis petersoni*	coastal shiner
Cypriniformes	Cyprinidae	*Notropis amoenus*	comely shiner
Cypriniformes	Cyprinidae	*Notropis xaenocephalus*	coosa shiner
Cypriniformes	Cyprinidae	*Notropis cummingsae*	dusky shiner
Cypriniformes	Cyprinidae	*Notropis atherinoides*	emerald shiner
Cypriniformes	Cyprinidae	*Notropis edwardraneyi*	fluvial shiner
Cypriniformes	Cyprinidae	*Notropis buchanani*	ghost shiner
Cypriniformes	Cyprinidae	*Notropis chlorocephalus*	greenhead shiner
Cypriniformes	Cyprinidae	*Notropis altipinnis*	highfin shiner
Cypriniformes	Cyprinidae	*Notropis micropteryx*	highland shiner
Cypriniformes	Cyprinidae	*Notropis hypsilepis*	highscale shiner
Cypriniformes	Cyprinidae	*Notropis chalybaeus*	ironcolor shiner
Cypriniformes	Cyprinidae	*Notropis ortenburgeri*	kiamichi shiner
Cypriniformes	Cyprinidae	*Notropis longirostris*	longnose shiner
Cypriniformes	Cyprinidae	*Notropis volucellus*	mimic shiner
Cypriniformes	Cyprinidae	*Notropis spectrunculus*	mirror shiner
Cypriniformes	Cyprinidae	*Notropis scabriceps*	new river shiner
Cypriniformes	Cyprinidae	*Notropis ammophilus*	orangefin shiner
Cypriniformes	Cyprinidae	*Notropis nubilus*	ozark minnow
Cypriniformes	Cyprinidae	*Notropis ozarcanus*	ozark shiner
Cypriniformes	Cyprinidae	*Notropis albizonatus*	palezone shiner
Cypriniformes	Cyprinidae	*Notropis perpallidus*	peppered shiner
Cypriniformes	Cyprinidae	*Notropis orca*	phantom shiner
Cypriniformes	Cyprinidae	*Notropis ariommus*	popeye shiner
Cypriniformes	Cyprinidae	*Notropis anogenus*	pugnose shiner
Cypriniformes	Cyprinidae	*Notropis chrosomus*	rainbow shiner
Cypriniformes	Cyprinidae	*Notropis bairdi*	red river shiner
Cypriniformes	Cyprinidae	*Notropis harperi*	redeye chub
Cypriniformes	Cyprinidae	*Notropis chiliticus*	redlip shiner
Cypriniformes	Cyprinidae	*Notropis jemezanus*	rio grande shiner
Cypriniformes	Cyprinidae	*Notropis blennius*	river shiner
Cypriniformes	Cyprinidae	*Notropis suttkusi*	rocky shiner
Cypriniformes	Cyprinidae	*Notropis rubellus*	rosyface shiner
Cypriniformes	Cyprinidae	*Notropis baileyi*	rough shiner
Cypriniformes	Cyprinidae	*Notropis semperasper*	roughhead shiner
Cypriniformes	Cyprinidae	*Notropis sabinae*	sabine shiner
Cypriniformes	Cyprinidae	*Notropis rubricroceus*	saffron shiner
Cypriniformes	Cyprinidae	*Notropis stramineus*	sand shiner
Cypriniformes	Cyprinidae	*Notropis scepticus*	sandbar shiner
Cypriniformes	Cyprinidae	*Notropis oxyrhynchus*	sharpnose shiner
Cypriniformes	Cyprinidae	*Notropis photogenis*	silver shiner

ORDER	FAMILY	SCIENTIFIC NAME	COMMON NAME
Cypriniformes	Cyprinidae	*Notropis shumardi*	silverband shiner
Cypriniformes	Cyprinidae	*Notropis buccatus*	silverjaw minnow
Cypriniformes	Cyprinidae	*Notropis candidus*	silverside shiner
Cypriniformes	Cyprinidae	*Notropis stilbius*	silverstripe shiner
Cypriniformes	Cyprinidae	*Notropis uranoscopus*	skygazer shiner
Cypriniformes	Cyprinidae	*Notropis buccula*	smalleye shiner
Cypriniformes	Cyprinidae	*Notropis hudsonius*	spottail shiner
Cypriniformes	Cyprinidae	*Notropis procne*	swallowtail shiner
Cypriniformes	Cyprinidae	*Notropis maculatus*	taillight shiner
Cypriniformes	Cyprinidae	*Notropis braytoni*	tamaulipas shiner
Cypriniformes	Cyprinidae	*Notropis telescopus*	telescope shiner
Cypriniformes	Cyprinidae	*Notropis leuciodus*	tennessee shiner
Cypriniformes	Cyprinidae	*Notropis amabilis*	texas shiner
Cypriniformes	Cyprinidae	*Notropis topeka*	topeka shiner
Cypriniformes	Cyprinidae	*Notropis greenei*	wedgespot shiner
Cypriniformes	Cyprinidae	*Notropis texanus*	weed shiner
Cypriniformes	Cyprinidae	*Notropis alborus*	whitemouth shiner
Cypriniformes	Cyprinidae	*Notropis rafinesquei*	yazoo shiner
Cypriniformes	Cyprinidae	*Notropis lutipinnis*	yellowfin shiner
Cypriniformes	Cyprinidae	*Opsopoeodus emiliae*	pugnose minnow
Cypriniformes	Cyprinidae	*Oregonichthys crameri*	oregon chub
Cypriniformes	Cyprinidae	*Oregonichthys kalawatseti*	umpqua chub
Cypriniformes	Cyprinidae	*Orthodon microlepidotus*	sacramento blackfish
Cypriniformes	Cyprinidae	*Phenacobius crassilabrum*	fatlips minnow
Cypriniformes	Cyprinidae	*Phenacobius teretulus*	kanawha minnow
Cypriniformes	Cyprinidae	*Phenacobius catostomus*	riffle minnow
Cypriniformes	Cyprinidae	*Phenacobius uranops*	stargazing minnow
Cypriniformes	Cyprinidae	*Phenacobius mirabilis*	suckermouth minnow
Cypriniformes	Cyprinidae	*Phoxinus cumberlandensis*	blackside dace
Cypriniformes	Cyprinidae	*Phoxinus neogaeus*	finescale dace
Cypriniformes	Cyprinidae	*Phoxinus saylori*	laurel dace
Cypriniformes	Cyprinidae	*Phoxinus oreas*	mountain redbelly dace
Cypriniformes	Cyprinidae	*Phoxinus eos*	northern redbelly dace
Cypriniformes	Cyprinidae	*Phoxinus erythrogaster*	southern redbelly dace
Cypriniformes	Cyprinidae	*Phoxinus tennesseensis*	tennessee dace
Cypriniformes	Cyprinidae	*Pimephales notatus*	bluntnose minnow
Cypriniformes	Cyprinidae	*Pimephales vigilax*	bullhead minnow
Cypriniformes	Cyprinidae	*Pimephales promelas*	fathead minnow
Cypriniformes	Cyprinidae	*Pimephales tenellus*	slim minnow
Cypriniformes	Cyprinidae	*Plagopterus argentissimus*	woundfin
Cypriniformes	Cyprinidae	*Platygobio gracilis*	flathead chub
Cypriniformes	Cyprinidae	*Pogonichthys ciscoides*	clear lake splittail

ORDER	FAMILY	SCIENTIFIC NAME	COMMON NAME
Cypriniformes	Cyprinidae	*Pogonichthys macrolepidotus*	splittail
Cypriniformes	Cyprinidae	*Pteronotropis grandipinnis*	apalachee shiner
Cypriniformes	Cyprinidae	*Pteronotropis hubbsi*	bluehead shiner
Cypriniformes	Cyprinidae	*Pteronotropis welaka*	bluenose shiner
Cypriniformes	Cyprinidae	*Pteronotropis euryzonus*	broadstripe shiner
Cypriniformes	Cyprinidae	*Pteronotropis signipinnis*	flagfin shiner
Cypriniformes	Cyprinidae	*Pteronotropis merlini*	orangetail shiner
Cypriniformes	Cyprinidae	*Pteronotropis hypselopterus*	sailfin shiner
Cypriniformes	Cyprinidae	*Ptychocheilus lucius*	colorado pikeminnow
Cypriniformes	Cyprinidae	*Ptychocheilus oregonensis*	northern pikeminnow
Cypriniformes	Cyprinidae	*Ptychocheilus grandis*	sacramento pikeminnow
Cypriniformes	Cyprinidae	*Ptychocheilus umpquae*	umpqua pikeminnow
Cypriniformes	Cyprinidae	*Relictus solitarius*	relict dace
Cypriniformes	Cyprinidae	*Rhinichthys atratulus*	eastern blacknose dace
Cypriniformes	Cyprinidae	*Rhinichthys deaconi*	las vegas dace
Cypriniformes	Cyprinidae	*Rhinichthys falcatus*	leopard dace
Cypriniformes	Cyprinidae	*Rhinichthys cobitis*	loach minnow
Cypriniformes	Cyprinidae	*Rhinichthys cataractae*	longnose dace
Cypriniformes	Cyprinidae	*Rhinichthys osculus*	speckled dace
Cypriniformes	Cyprinidae	*Rhinichthys umatilla*	umatilla dace
Cypriniformes	Cyprinidae	*Rhinichthys evermanni*	umpqua dace
Cypriniformes	Cyprinidae	*Rhinichthys obtusus*	western blacknose dace
Cypriniformes	Cyprinidae	*Rhodeus sericeus*	bitterling
Cypriniformes	Cyprinidae	*Richardsonius egregius*	lahontan redside
Cypriniformes	Cyprinidae	*Richardsonius balteatus*	redside shiner
Cypriniformes	Cyprinidae	*Richardsonius X Rhinichthys balteatus x osculus*	redside shiner x speckled dace
Cypriniformes	Cyprinidae	*Scardinius erythrophthalmus*	rudd
Cypriniformes	Cyprinidae	*Semotilus atromaculatus*	creek chub
Cypriniformes	Cyprinidae	*Semotilus thoreauianus*	dixie chub
Cypriniformes	Cyprinidae	*Semotilus corporalis*	fallfish
Cypriniformes	Cyprinidae	*Semotilus lumbee*	sandhills chub
Cypriniformes	Cyprinidae	*Snyderichthys copei*	leatherside chub
Cypriniformes	Cyprinidae	*Tinca tinca*	tench
Cypriniformes	Cyprinidae	*Cyprinella cf. zanema*	thinlip chub
Cypriniformes	Cyprinidae	*Hypophthalmichthys molitrix*	silver carp
Cypriniformes	Catostomidae	*Catostomus cf. latipinnis*	little colorado river sucker
Cypriniformes	Catostomidae	*Moxostoma robustum*	smallfin redhorse
Cypriniformes	Cyprinidae	*Macrhybopsis cf. aestivalis*	coosa chub
Cypriniformes	Cyprinidae	*Semotilus X Luxilus atromaculatus x chrysocephalus*	creek chub x striped shiner

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Cypriniformes	Cyprinidae	*Cyprinus carpio*	mirror carp
Cypriniformes	Cyprinidae	*Hypophthalmichthys nobilis*	bighead carp
Cypriniformes	Cyprinidae	*Notropis amplamala*	longjaw minnow
Cypriniformes	Cyprinidae	*Notropis cf. spectrunculus*	sawfin shiner
Cypriniformes	Cyprinidae	*Pteronotropis stonei*	lowland shiner
Cyprinodontiformes	Aplocheilidae	*Rivulus hartii*	giant rivulus
Cyprinodontiformes	Aplocheilidae	*Rivulus marmoratus*	mangrove rivulus
Cyprinodontiformes	Cyprinodontidae	*Cyprinodon nevadensis*	amargosa pupfish
Cyprinodontiformes	Cyprinodontidae	*Cyprinodon elegans*	comanche springs pupfish
Cyprinodontiformes	Cyprinodontidae	*Cyprinodon eximius*	conchos pupfish
Cyprinodontiformes	Cyprinodontidae	*Cyprinodon macularius*	desert pupfish
Cyprinodontiformes	Cyprinodontidae	*Cyprinodon diabolis*	devils hole pupfish
Cyprinodontiformes	Cyprinodontidae	*Cyprinodon bovinus*	leon springs pupfish
Cyprinodontiformes	Cyprinodontidae	*Cyprinodon radiosus*	owens pupfish
Cyprinodontiformes	Cyprinodontidae	*Cyprinodon pecosensis*	pecos pupfish
Cyprinodontiformes	Cyprinodontidae	*Cyprinodon rubrofluviatilis*	red river pupfish
Cyprinodontiformes	Cyprinodontidae	*Cyprinodon salinus*	salt creek pupfish
Cyprinodontiformes	Cyprinodontidae	*Cyprinodon arcuatus*	santa cruz pupfish
Cyprinodontiformes	Cyprinodontidae	*Cyprinodon variegatus*	sheepshead minnow
Cyprinodontiformes	Cyprinodontidae	*Cyprinodon eremus*	sonoyta pupfish
Cyprinodontiformes	Cyprinodontidae	*Cyprinodon tularosa*	white sands pupfish
Cyprinodontiformes	Cyprinodontidae	*Jordanella floridae*	flagfish
Cyprinodontiformes	Fundulidae	*Fundulus diaphanus*	banded killifish
Cyprinodontiformes	Fundulidae	*Fundulus cingulatus*	banded topminnow
Cyprinodontiformes	Fundulidae	*Fundulus julisia*	barrens topminnow
Cyprinodontiformes	Fundulidae	*Fundulus pulvereus*	bayou killifish
Cyprinodontiformes	Fundulidae	*Fundulus nottii*	bayou topminnow
Cyprinodontiformes	Fundulidae	*Fundulus olivaceus*	blackspotted topminnow
Cyprinodontiformes	Fundulidae	*Fundulus notatus*	blackstripe topminnow
Cyprinodontiformes	Fundulidae	*Fundulus euryzonus*	broadstripe topminnow
Cyprinodontiformes	Fundulidae	*Fundulus chrysotus*	golden topminnow
Cyprinodontiformes	Fundulidae	*Fundulus parvipinnis*	guadalupe cardinalfish
Cyprinodontiformes	Fundulidae	*Fundulus grandis*	gulf killifish
Cyprinodontiformes	Fundulidae	*Fundulus lineolatus*	lined topminnow
Cyprinodontiformes	Fundulidae	*Fundulus confluentus*	marsh killifish
Cyprinodontiformes	Fundulidae	*Fundulus heteroclitus*	mummichog
Cyprinodontiformes	Fundulidae	*Fundulus kansae*	northern plains killifish
Cyprinodontiformes	Fundulidae	*Fundulus catenatus*	northern studfish
Cyprinodontiformes	Fundulidae	*Fundulus zebrinus*	plains killifish
Cyprinodontiformes	Fundulidae	*Fundulus sciadicus*	plains topminnow
Cyprinodontiformes	Fundulidae	*Fundulus rubrifrons*	redface topminnow
Cyprinodontiformes	Fundulidae	*Fundulus escambiae*	russetfin topminnow

ORDER	FAMILY	SCIENTIFIC NAME	COMMON NAME
Cyprinodontiformes	Fundulidae	*Fundulus jenkinsi*	saltmarsh topminnow
Cyprinodontiformes	Fundulidae	*Fundulus seminolis*	seminole killifish
Cyprinodontiformes	Fundulidae	*Fundulus stellifer*	southern studfish
Cyprinodontiformes	Fundulidae	*Fundulus rathbuni*	speckled killifish
Cyprinodontiformes	Fundulidae	*Fundulus luciae*	spotfin killifish
Cyprinodontiformes	Fundulidae	*Fundulus dispar*	starhead topminnow
Cyprinodontiformes	Fundulidae	*Fundulus bifax*	stippled studfish
Cyprinodontiformes	Fundulidae	*Fundulus waccamensis*	waccamaw killifish
Cyprinodontiformes	Fundulidae	*Fundulus blairae*	western starhead topminnow
Cyprinodontiformes	Fundulidae	*Fundulus albolineatus*	whiteline topminnow
Cyprinodontiformes	Fundulidae	*Leptolucania ommata*	pygmy killifish
Cyprinodontiformes	Fundulidae	*Lucania goodei*	bluefin killifish
Cyprinodontiformes	Fundulidae	*Lucania parva*	rainwater killifish
Cyprinodontiformes	Goodeidae	*Crenichthys nevadae*	railroad valley springfish
Cyprinodontiformes	Goodeidae	*Crenichthys baileyi*	white river springfish
Cyprinodontiformes	Goodeidae	*Empetrichthys merriami*	ash meadows poolfish
Cyprinodontiformes	Goodeidae	*Empetrichthys latos*	pahrump poolfish
Cyprinodontiformes	Poeciliidae	*Belonesox belizanus*	pike killifish
Cyprinodontiformes	Poeciliidae	*Gambusia amistadensis*	amistad gambusia
Cyprinodontiformes	Poeciliidae	*Gambusia gaigei*	big bend gambusia
Cyprinodontiformes	Poeciliidae	*Gambusia senilis*	blotched gambusia
Cyprinodontiformes	Poeciliidae	*Gambusia heterochir*	clear creek gambusia
Cyprinodontiformes	Poeciliidae	*Gambusia holbrooki*	eastern mosquitofish
Cyprinodontiformes	Poeciliidae	*Gambusia geiseri*	largespring gambusia
Cyprinodontiformes	Poeciliidae	*Gambusia rhizophorae*	mangrove gambusia
Cyprinodontiformes	Poeciliidae	*Gambusia nobilis*	pecos gambusia
Cyprinodontiformes	Poeciliidae	*Gambusia georgei*	san marcos gambusia
Cyprinodontiformes	Poeciliidae	*Gambusia speciosa*	tex-mex gambusia
Cyprinodontiformes	Poeciliidae	*Gambusia affinis*	western mosquitofish
Cyprinodontiformes	Poeciliidae	*Heterandria formosa*	least killifish
Cyprinodontiformes	Poeciliidae	*Poecilia formosa*	amazon molly
Cyprinodontiformes	Poeciliidae	*Poecilia reticulata*	guppy
Cyprinodontiformes	Poeciliidae	*Poecilia sphenops*	mexican molly
Cyprinodontiformes	Poeciliidae	*Poecilia latipinna*	sailfin molly
Cyprinodontiformes	Poeciliidae	*Poecilia mexicana*	shortfin molly
Cyprinodontiformes	Poeciliidae	*Poeciliopsis occidentalis*	gila topminnow
Cyprinodontiformes	Poeciliidae	*Poeciliopsis gracilis*	porthole livebearer
Cyprinodontiformes	Poeciliidae	*Xiphophorus hellerii*	green swordtail
Cyprinodontiformes	Poeciliidae	*Xiphophorus maculatus*	southern platyfish
Cyprinodontiformes	Poeciliidae	*Xiphophorus variatus*	variable platyfish
Elopiformes	Elopidae	*Elops saurus*	ladyfish
Elopiformes	Elopidae	*Elops affinis*	machete

ORDER	FAMILY	SCIENTIFIC NAME	COMMON NAME
Elopiformes	Megalopidae	*Megalops atlanticus*	tarpon
Esociformes	Esocidae	*Esox niger*	chain pickerel
Esociformes	Esocidae	*Esox masquinongy*	muskellunge
Esociformes	Esocidae	*Esox lucius*	northern pike
Esociformes	Esocidae	*Esox americanus*	redfin pickerel
Esociformes	Esocidae	*Esox americanus vermiculatus*	grass pickerel
Esociformes	Esocidae	*Esox lucius x masquinongy*	tiger muskellunge
Esociformes	Umbridae	*Dallia pectoralis*	alaska blackfish
Esociformes	Umbridae	*Novumbra hubbsi*	olympic mudminnow
Esociformes	Umbridae	*Umbra limi*	central mudminnow
Esociformes	Umbridae	*Umbra pygmaea*	eastern mudminnow
Gadiformes	Gadidae	*Lota lota*	burbot
Gadiformes	Gadidae	*Microgadus tomcod*	atlantic tomcod
Gasterosteiformes	Gasterosteidae	*Apeltes quadracus*	fourspine stickleback
Gasterosteiformes	Gasterosteidae	*Culaea inconstans*	brook stickleback
Gasterosteiformes	Gasterosteidae	*Gasterosteus aculeatus*	espinocho
Gasterosteiformes	Gasterosteidae	*Pungitius pungitius*	ninespine stickleback
Gasterosteiformes	Syngnathidae	*Microphis brachyurus*	opossum pipefish
Gasterosteiformes	Syngnathidae	*Syngnathus scovelli*	gulf pipefish
Gasterosteiformes	Gasterosteidae	*Gasterosteus aculeatus*	threespine stickleback
Hiodontiformes	Hiodontidae	*Hiodon alosoides*	goldeye
Hiodontiformes	Hiodontidae	*Hiodon tergisus*	mooneye
Lepisosteiformes	Lepisosteidae	*Atractosteus spatula*	alligator gar
Lepisosteiformes	Lepisosteidae	*Lepisosteus platyrhincus*	florida gar
Lepisosteiformes	Lepisosteidae	*Lepisosteus osseus*	longnose gar
Lepisosteiformes	Lepisosteidae	*Lepisosteus platostomus*	shortnose gar
Lepisosteiformes	Lepisosteidae	*Lepisosteus oculatus*	spotted gar
Mugiliformes	Mugilidae	*Agonostomus monticola*	mountain mullet
Mugiliformes	Mugilidae	*Mugil cephalus*	striped mullet
Mugiliformes	Mugilidae	*Mugil curema*	white mullet
Myliobatiformes	Dasyatidae	*Dasyatis sabina*	atlantic stingray
Osteoglossiformes	Notopteridae	*Chitala ornata*	clown knifefish
Perciformes	Belontiidae	*Trichopsis vittata*	croaking gourami
Perciformes	Centrarchidae	*Acantharchus pomotis*	mud sunfish
Perciformes	Centrarchidae	*Ambloplites constellatus*	ozark bass
Perciformes	Centrarchidae	*Ambloplites cavifrons*	roanoke bass
Perciformes	Centrarchidae	*Ambloplites rupestris*	rock bass
Perciformes	Centrarchidae	*Ambloplites ariommus*	shadow bass
Perciformes	Centrarchidae	*Archoplites interruptus*	sacramento perch
Perciformes	Centrarchidae	*Centrarchus macropterus*	flier
Perciformes	Centrarchidae	*Enneacanthus obesus*	banded sunfish
Perciformes	Centrarchidae	*Enneacanthus chaetodon*	blackbanded sunfish

ORDER	FAMILY	SCIENTIFIC NAME	COMMON NAME
Perciformes	Centrarchidae	*Enneacanthus gloriosus*	bluespotted sunfish
Perciformes	Centrarchidae	*Lepomis symmetricus*	bantam sunfish
Perciformes	Centrarchidae	*Lepomis macrochirus*	bluegill
Perciformes	Centrarchidae	*Lepomis marginatus*	dollar sunfish
Perciformes	Centrarchidae	*Lepomis cyanellus*	green sunfish
Perciformes	Centrarchidae	*Lepomis megalotis*	longear sunfish
Perciformes	Centrarchidae	*Lepomis humilis*	orangespotted sunfish
Perciformes	Centrarchidae	*Lepomis gibbosus*	pumpkinseed
Perciformes	Centrarchidae	*Lepomis auritus*	redbreast sunfish
Perciformes	Centrarchidae	*Lepomis microlophus*	redear sunfish
Perciformes	Centrarchidae	*Lepomis miniatus*	redspotted sunfish
Perciformes	Centrarchidae	*Lepomis punctatus*	spotted sunfish
Perciformes	Centrarchidae	*Lepomis gulosus*	warmouth
Perciformes	Centrarchidae	*Micropterus treculii*	guadalupe bass
Perciformes	Centrarchidae	*Micropterus salmoides*	largemouth bass
Perciformes	Centrarchidae	*Micropterus coosae*	redeye bass
Perciformes	Centrarchidae	*Micropterus cataractae*	shoal bass
Perciformes	Centrarchidae	*Micropterus dolomieu*	smallmouth bass
Perciformes	Centrarchidae	*Micropterus punctulatus*	spotted bass
Perciformes	Centrarchidae	*Micropterus notius*	suwannee bass
Perciformes	Centrarchidae	*Pomoxis nigromaculatus*	black crappie
Perciformes	Centrarchidae	*Pomoxis annularis*	white crappie
Perciformes	Centropomidae	*Centropomus undecimalis*	common snook
Perciformes	Centropomidae	*Centropomus parallelus*	smallscale fat snook
Perciformes	Centropomidae	*Centropomus ensiferus*	swordspine snook
Perciformes	Centropomidae	*Centropomus pectinatus*	tarpon snook
Perciformes	Channidae	*Channa marulius*	bullseye snakehead
Perciformes	Channidae	*Channa argus*	snakehead
Perciformes	Cichlidae	*Astronotus ocellatus*	oscar
Perciformes	Cichlidae	*Cichla ocellaris*	butterfly peacock bass
Perciformes	Cichlidae	*Cichlasoma bimaculatum*	black acara
Perciformes	Cichlidae	*Cichlasoma nigrofasciatum*	convict cichlid
Perciformes	Cichlidae	*Cichlasoma meeki*	firemouth cichlid
Perciformes	Cichlidae	*Cichlasoma octofasciatum*	jack dempsey
Perciformes	Cichlidae	*Cichlasoma managuense*	jaguar guapote
Perciformes	Cichlidae	*Cichlasoma urophthalmus*	mayan cichlid
Perciformes	Cichlidae	*Cichlasoma citrinellum*	midas cichlid
Perciformes	Cichlidae	*Cichlasoma cyanoguttatum*	rio grande cichlid
Perciformes	Cichlidae	*Cichlasoma salvini*	yellowbelly cichlid
Perciformes	Cichlidae	*Geophagus surinamensis*	redstriped eartheater
Perciformes	Cichlidae	*Hemichromis letourneuxi*	african jewelfish
Perciformes	Cichlidae	*Heros severus*	banded cichlid

ORDER	FAMILY	SCIENTIFIC NAME	COMMON NAME
Perciformes	Cichlidae	*Oreochromis aureus*	blue tilapia
Perciformes	Cichlidae	*Oreochromis mossambicus*	mozambique tilapia
Perciformes	Cichlidae	*Oreochromis niloticus*	nile tilapia
Perciformes	Cichlidae	*Oreochromis urolepis*	wami tilapia
Perciformes	Cichlidae	*Sarotherodon melanotheron*	blackchin tilapia
Perciformes	Cichlidae	*Tilapia zillii*	redbelly tilapia
Perciformes	Cichlidae	*Tilapia mariae*	spotted tilapia
Perciformes	Elassomatidae	*Elassoma zonatum*	banded pygmy sunfish
Perciformes	Elassomatidae	*Elassoma okatie*	bluebarred pygmy sunfish
Perciformes	Elassomatidae	*Elassoma boehlkei*	carolina pygmy sunfish
Perciformes	Elassomatidae	*Elassoma evergladei*	everglades pygmy sunfish
Perciformes	Elassomatidae	*Elassoma okefenokee*	okefenokee pygmy sunfish
Perciformes	Elassomatidae	*Elassoma alabamae*	spring pygmy sunfish
Perciformes	Eleotridae	*Dormitator maculatus*	fat sleeper
Perciformes	Eleotridae	*Eleotris amblyopsis*	largescaled spinycheek
Perciformes	Eleotridae	*Eleotris perniger*	smallscaled spinycheek
Perciformes	Eleotridae	*Eleotris picta*	spotted sleeper
Perciformes	Eleotridae	*Gobiomorus dormitor*	bigmouth sleeper
Perciformes	Eleotridae	*Guavina guavina*	guavina
Perciformes	Eleotridae	*Eleotris amblyopsis*	largescaled spinycheek sleeper
Perciformes	Embiotocidae	*Cymatogaster aggregata*	shiner perch
Perciformes	Embiotocidae	*Hysterocarpus traskii*	tule perch
Perciformes	Gerreidae	*Diapterus auratus*	irish pompano
Perciformes	Gerreidae	*Eucinostomus harengulus*	tidewater mojarra
Perciformes	Gerreidae	*Eugerres plumieri*	striped mojarra
Perciformes	Gerreidae	*Gerres cinereus*	yellowfin mojarra
Perciformes	Gobiidae	*Acanthogobius flavimanus*	yellowfin goby
Perciformes	Gobiidae	*Awaous banana*	river goby
Perciformes	Gobiidae	*Clevelandia ios*	arrow goby
Perciformes	Gobiidae	*Ctenogobius fasciatus*	blotchcheek goby
Perciformes	Gobiidae	*Ctenogobius boleosoma*	darter goby
Perciformes	Gobiidae	*Ctenogobius shufeldti*	freshwater goby
Perciformes	Gobiidae	*Ctenogobius claytonii*	mexican goby
Perciformes	Gobiidae	*Ctenogobius pseudofasciatus*	slashcheek goby
Perciformes	Gobiidae	*Eucyclogobius newberryi*	tidewater goby
Perciformes	Gobiidae	*Gillichthys mirabilis*	longjaw mudsucker
Perciformes	Gobiidae	*Gobioides broussonetii*	violet goby
Perciformes	Gobiidae	*Gobiosoma bosc*	naked goby
Perciformes	Gobiidae	*Lophogobius cyprinoides*	crested goby
Perciformes	Gobiidae	*Microgobius gulosus*	clown goby
Perciformes	Gobiidae	*Neogobius melanostomus*	round goby

ORDER	FAMILY	SCIENTIFIC NAME	COMMON NAME
Perciformes	Gobiidae	*Proterorhinus marmoratus*	tubenose goby
Perciformes	Gobiidae	*Tridentiger bifasciatus*	shimofuri goby
Perciformes	Gobiidae	*Tridentiger barbatus*	shokihaze goby
Perciformes	Haemulidae	*Orthopristis chrysoptera*	pigfish
Perciformes	Lutjanidae	*Lutjanus griseus*	gray snapper
Perciformes	Moronidae	*Morone saxatilis*	striped bass
Perciformes	Moronidae	*Morone chrysops*	white bass
Perciformes	Moronidae	*Morone americana*	white perch
Perciformes	Moronidae	*Morone mississippiensis*	yellow bass
Perciformes	Moronidae	*Morone na*	wiper
Perciformes	Percidae	*Ammocrypta pellucida*	eastern sand darter
Perciformes	Percidae	*Ammocrypta bifascia*	florida sand darter
Perciformes	Percidae	*Ammocrypta beanii*	naked sand darter
Perciformes	Percidae	*Ammocrypta vivax*	scaly sand darter
Perciformes	Percidae	*Ammocrypta meridiana*	southern sand darter
Perciformes	Percidae	*Ammocrypta clara*	western sand darter
Perciformes	Percidae	*Crystallaria asprella*	crystal darter
Perciformes	Percidae	*Etheostoma ramseyi*	alabama darter
Perciformes	Percidae	*Etheostoma cragini*	arkansas darter
Perciformes	Percidae	*Etheostoma euzonum*	arkansas saddled darter
Perciformes	Percidae	*Etheostoma sagitta*	arrow darter
Perciformes	Percidae	*Etheostoma cinereum*	ashy darter
Perciformes	Percidae	*Etheostoma zonifer*	backwater darter
Perciformes	Percidae	*Etheostoma zonale*	banded darter
Perciformes	Percidae	*Etheostoma zonistium*	bandfin darter
Perciformes	Percidae	*Etheostoma obeyense*	barcheek darter
Perciformes	Percidae	*Etheostoma forbesi*	barrens darter
Perciformes	Percidae	*Etheostoma rubrum*	bayou darter
Perciformes	Percidae	*Etheostoma nigripinne*	blackfin darter
Perciformes	Percidae	*Etheostoma duryi*	blackside snubnose darter
Perciformes	Percidae	*Etheostoma blennius*	blenny darter
Perciformes	Percidae	*Etheostoma sanguifluum*	bloodfin darter
Perciformes	Percidae	*Etheostoma camurum*	bluebreast darter
Perciformes	Percidae	*Etheostoma jessiae*	blueside darter
Perciformes	Percidae	*Etheostoma chlorosoma*	bluntnose darter
Perciformes	Percidae	*Etheostoma wapiti*	boulder darter
Perciformes	Percidae	*Etheostoma lynceum*	brighteye darter
Perciformes	Percidae	*Etheostoma burri*	brook darter
Perciformes	Percidae	*Etheostoma edwini*	brown darter
Perciformes	Percidae	*Etheostoma bison*	buffalo darter
Perciformes	Percidae	*Etheostoma osburni*	candy darter
Perciformes	Percidae	*Etheostoma collis*	carolina darter

ORDER	FAMILY	SCIENTIFIC NAME	COMMON NAME
Perciformes	Percidae	*Etheostoma scotti*	cherokee darter
Perciformes	Percidae	*Etheostoma etnieri*	cherry darter
Perciformes	Percidae	*Etheostoma cervus*	chickasaw darter
Perciformes	Percidae	*Etheostoma davisoni*	choctawhatchee darter
Perciformes	Percidae	*Etheostoma hopkinsi*	christmas darter
Perciformes	Percidae	*Etheostoma colorosum*	coastal darter
Perciformes	Percidae	*Etheostoma ditrema*	coldwater darter
Perciformes	Percidae	*Etheostoma coosae*	coosa darter
Perciformes	Percidae	*Etheostoma aquali*	coppercheek darter
Perciformes	Percidae	*Etheostoma basilare*	corrugated darter
Perciformes	Percidae	*Etheostoma collettei*	creole darter
Perciformes	Percidae	*Etheostoma corona*	crown darter
Perciformes	Percidae	*Etheostoma susanae*	cumberland darter
Perciformes	Percidae	*Etheostoma uniporum*	current darter
Perciformes	Percidae	*Etheostoma proeliare*	cypress darter
Perciformes	Percidae	*Etheostoma percnurum*	duskytail darter
Perciformes	Percidae	*Etheostoma pseudovulatum*	egg-mimic darter
Perciformes	Percidae	*Etheostoma baileyi*	emerald darter
Perciformes	Percidae	*Etheostoma etowahae*	etowah darter
Perciformes	Percidae	*Etheostoma flabellare*	fantail darter
Perciformes	Percidae	*Etheostoma pyrrhogaster*	firebelly darter
Perciformes	Percidae	*Etheostoma fonticola*	fountain darter
Perciformes	Percidae	*Etheostoma crossopterum*	fringed darter
Perciformes	Percidae	*Etheostoma vitreum*	glassy darter
Perciformes	Percidae	*Etheostoma denoncourti*	golden darter
Perciformes	Percidae	*Etheostoma parvipinne*	goldstripe darter
Perciformes	Percidae	*Etheostoma jordani*	greenbreast darter
Perciformes	Percidae	*Etheostoma chlorobranchium*	greenfin darter
Perciformes	Percidae	*Etheostoma blennioides*	greenside darter
Perciformes	Percidae	*Etheostoma lepidum*	greenthroat darter
Perciformes	Percidae	*Etheostoma oophylax*	guardian darter
Perciformes	Percidae	*Etheostoma swaini*	gulf darter
Perciformes	Percidae	*Etheostoma histrio*	harlequin darter
Perciformes	Percidae	*Etheostoma lawrencei*	headwater darter
Perciformes	Percidae	*Etheostoma kantuckeense*	highland rim darter
Perciformes	Percidae	*Etheostoma brevirostrum*	holiday darter
Perciformes	Percidae	*Etheostoma exile*	iowa darter
Perciformes	Percidae	*Etheostoma nigrum*	johnny darter
Perciformes	Percidae	*Etheostoma kanawhae*	kanawha darter
Perciformes	Percidae	*Etheostoma rafinesquei*	kentucky darter
Perciformes	Percidae	*Etheostoma microperca*	least darter
Perciformes	Percidae	*Etheostoma chuckwachatte*	lipstick darter

ORDER	FAMILY	SCIENTIFIC NAME	COMMON NAME
Perciformes	Percidae	*Etheostoma neopterum*	lollypop darter
Perciformes	Percidae	*Etheostoma longimanum*	longfin darter
Perciformes	Percidae	*Etheostoma sellare*	maryland darter
Perciformes	Percidae	*Etheostoma tetrazonum*	missouri saddled darter
Perciformes	Percidae	*Etheostoma asprigene*	mud darter
Perciformes	Percidae	*Etheostoma nianguae*	niangua darter
Perciformes	Percidae	*Etheostoma okaloosae*	okaloosa darter
Perciformes	Percidae	*Etheostoma radiosum*	orangebelly darter
Perciformes	Percidae	*Etheostoma bellum*	orangefin darter
Perciformes	Percidae	*Etheostoma spectabile*	orangethroat darter
Perciformes	Percidae	*Etheostoma pallididorsum*	paleback darter
Perciformes	Percidae	*Etheostoma mariae*	pinewoods darter
Perciformes	Percidae	*Etheostoma caeruleum*	rainbow darter
Perciformes	Percidae	*Etheostoma luteovinctum*	redband darter
Perciformes	Percidae	*Etheostoma whipplei*	redfin darter
Perciformes	Percidae	*Etheostoma rufilineatum*	redline darter
Perciformes	Percidae	*Etheostoma artesiae*	redspot darter
Perciformes	Percidae	*Etheostoma chienense*	relict darter
Perciformes	Percidae	*Etheostoma grahami*	rio grande darter
Perciformes	Percidae	*Etheostoma podostemone*	riverweed darter
Perciformes	Percidae	*Etheostoma rupestre*	rock darter
Perciformes	Percidae	*Etheostoma phytophilum*	rush darter
Perciformes	Percidae	*Etheostoma flavum*	saffron darter
Perciformes	Percidae	*Etheostoma fricksium*	savannah darter
Perciformes	Percidae	*Etheostoma serrifer*	sawcheek darter
Perciformes	Percidae	*Etheostoma thalassinum*	seagreen darter
Perciformes	Percidae	*Etheostoma acuticeps*	sharphead darter
Perciformes	Percidae	*Etheostoma tecumsehi*	shawnee darter
Perciformes	Percidae	*Etheostoma smithi*	slabrock darter
Perciformes	Percidae	*Etheostoma boschungi*	slackwater darter
Perciformes	Percidae	*Etheostoma gracile*	slough darter
Perciformes	Percidae	*Etheostoma microlepidum*	smallscale darter
Perciformes	Percidae	*Etheostoma simoterum*	snubnose darter
Perciformes	Percidae	*Etheostoma olivaceum*	sooty darter
Perciformes	Percidae	*Etheostoma stigmaeum*	speckled darter
Perciformes	Percidae	*Etheostoma barrenense*	splendid darter
Perciformes	Percidae	*Etheostoma squamiceps*	spottail darter
Perciformes	Percidae	*Etheostoma maculatum*	spotted darter
Perciformes	Percidae	*Etheostoma punctulatum*	stippled darter
Perciformes	Percidae	*Etheostoma derivativum*	stone darter
Perciformes	Percidae	*Etheostoma fragi*	strawberry darter
Perciformes	Percidae	*Etheostoma striatulum*	striated darter

ORDER	FAMILY	SCIENTIFIC NAME	COMMON NAME
Perciformes	Percidae	*Etheostoma virgatum*	striped darter
Perciformes	Percidae	*Etheostoma kennicotti*	stripetail darter
Perciformes	Percidae	*Etheostoma fusiforme*	swamp darter
Perciformes	Percidae	*Etheostoma swannanoa*	swannanoa darter
Perciformes	Percidae	*Etheostoma tallapoosae*	tallapoosa darter
Perciformes	Percidae	*Etheostoma barbouri*	teardrop darter
Perciformes	Percidae	*Etheostoma olmstedi*	tessellated darter
Perciformes	Percidae	*Etheostoma tippecanoe*	tippecanoe darter
Perciformes	Percidae	*Etheostoma lachneri*	tombigbee darter
Perciformes	Percidae	*Etheostoma trisella*	trispot darter
Perciformes	Percidae	*Etheostoma gutselli*	tuckasegee darter
Perciformes	Percidae	*Etheostoma inscriptum*	turquoise darter
Perciformes	Percidae	*Etheostoma tuscumbia*	tuscumbia darter
Perciformes	Percidae	*Etheostoma douglasi*	tuskaloosa darter
Perciformes	Percidae	*Etheostoma variatum*	variegate darter
Perciformes	Percidae	*Etheostoma chermocki*	vermilion darter
Perciformes	Percidae	*Etheostoma perlongum*	waccamaw darter
Perciformes	Percidae	*Etheostoma bellator*	warrior darter
Perciformes	Percidae	*Etheostoma nuchale*	watercress darter
Perciformes	Percidae	*Etheostoma vulneratum*	wounded darter
Perciformes	Percidae	*Etheostoma raneyi*	yazoo darter
Perciformes	Percidae	*Etheostoma moorei*	yellowcheek darter
Perciformes	Percidae	*Etheostoma juliae*	yoke darter
Perciformes	Percidae	*Etheostoma meadiae*	bluespar darter
Perciformes	Percidae	*Etheostoma planasaxatile*	duck darter
Perciformes	Percidae	*Etheostoma orientale*	eastrim darter
Perciformes	Percidae	*Etheostoma occidentale*	westrim darter
Perciformes	Percidae	*Gymnocephalus cernuus*	ruffe
Perciformes	Percidae	*Perca flavescens*	yellow perch
Perciformes	Percidae	*Percina antesella*	amber darter
Perciformes	Percidae	*Percina gymnocephala*	appalachia darter
Perciformes	Percidae	*Percina macrolepida*	bigscale logperch
Perciformes	Percidae	*Percina nigrofasciata*	blackbanded darter
Perciformes	Percidae	*Percina maculata*	blackside darter
Perciformes	Percidae	*Percina burtoni*	blotchside logperch
Perciformes	Percidae	*Percina cymatotaenia*	bluestripe darter
Perciformes	Percidae	*Percina palmaris*	bronze darter
Perciformes	Percidae	*Percina nevisense*	chainback darter
Perciformes	Percidae	*Percina copelandi*	channel darter
Perciformes	Percidae	*Percina brevicauda*	coal darter
Perciformes	Percidae	*Percina jenkinsi*	conasauga logperch
Perciformes	Percidae	*Percina sciera*	dusky darter

ORDER	FAMILY	SCIENTIFIC NAME	COMMON NAME
Perciformes	Percidae	*Percina stictogaster*	frecklebelly darter
Perciformes	Percidae	*Percina lenticula*	freckled darter
Perciformes	Percidae	*Percina evides*	gilt darter
Perciformes	Percidae	*Percina aurolineata*	goldline darter
Perciformes	Percidae	*Percina suttkusi*	gulf logperch
Perciformes	Percidae	*Percina pantherina*	leopard darter
Perciformes	Percidae	*Percina caprodes*	logperch
Perciformes	Percidae	*Percina macrocephala*	longhead darter
Perciformes	Percidae	*Percina nasuta*	longnose darter
Perciformes	Percidae	*Percina kathae*	mobile logperch
Perciformes	Percidae	*Percina squamata*	olive darter
Perciformes	Percidae	*Percina fulvitaenia*	ozark logperch
Perciformes	Percidae	*Percina aurora*	pearl darter
Perciformes	Percidae	*Percina crassa*	piedmont darter
Perciformes	Percidae	*Percina shumardi*	river darter
Perciformes	Percidae	*Percina roanoka*	roanoke darter
Perciformes	Percidae	*Percina rex*	roanoke logperch
Perciformes	Percidae	*Percina vigil*	saddleback darter
Perciformes	Percidae	*Percina oxyrhynchus*	sharpnose darter
Perciformes	Percidae	*Percina peltata*	shield darter
Perciformes	Percidae	*Percina phoxocephala*	slenderhead darter
Perciformes	Percidae	*Percina tanasi*	snail darter
Perciformes	Percidae	*Percina austroperca*	southern logperch
Perciformes	Percidae	*Percina uranidea*	stargazing darter
Perciformes	Percidae	*Percina notogramma*	stripeback darter
Perciformes	Percidae	*Percina aurantiaca*	tangerine darter
Perciformes	Percidae	*Percina carbonaria*	texas logperch
Perciformes	Percidae	*Percina burtoni*	blotchside darter
Perciformes	Percidae	*Sander canadensis*	sauger
Perciformes	Percidae	*Sander vitreus*	walleye
Perciformes	Percidae	*Sander lucioperca*	zander
Perciformes	Percidae	*Sander canadensis x vitreus*	saugeye
Perciformes	Pomatomidae	*Pomatomus saltatrix*	bluefish
Perciformes	Sciaenidae	*Aplodinotus grunniens*	freshwater drum
Perciformes	Sciaenidae	*Bairdiella icistia*	bairdiella
Perciformes	Sciaenidae	*Bairdiella chrysoura*	silver perch
Perciformes	Sciaenidae	*Cynoscion xanthulus*	orangemouth corvina
Perciformes	Sciaenidae	*Cynoscion nebulosus*	spotted seatrout
Perciformes	Sciaenidae	*Leiostomus xanthurus*	spot
Perciformes	Sciaenidae	*Micropogonias undulatus*	atlantic croaker
Perciformes	Sciaenidae	*Sciaenops ocellatus*	red drum
Perciformes	Sparidae	*Archosargus probatocephalus*	sheepshead

ORDER	FAMILY	SCIENTIFIC NAME	COMMON NAME
Perciformes	Sparidae	*Lagodon rhomboides*	pinfish
Perciformes	Centrarchidae	*Micropterus salmoides*	largemouth bass (yoy)
Perciformes	Centropomidae	*Centropomus parallelus*	fat snook
Perciformes	Percidae	*Etheostoma tennesseense*	tennessee darter
Percopsiformes	Amblyopsidae	*Amblyopsis spelaea*	northern cavefish
Percopsiformes	Amblyopsidae	*Amblyopsis rosae*	ozark cavefish
Percopsiformes	Amblyopsidae	*Chologaster cornuta*	swampfish
Percopsiformes	Amblyopsidae	*Forbesichthys agassizii*	spring cavefish
Percopsiformes	Amblyopsidae	*Speoplatyrhinus poulsoni*	alabama cavefish
Percopsiformes	Amblyopsidae	*Typhlichthys subterraneus*	southern cavefish
Percopsiformes	Aphredoderidae	*Aphredoderus sayanus*	pirate perch
Percopsiformes	Percopsidae	*Percopsis transmontana*	sand roller
Percopsiformes	Percopsidae	*Percopsis omiscomaycus*	trout-perch
Petromyzontiformes	Petromyzontidae	*Ichthyomyzon castaneus*	chestnut lamprey
Petromyzontiformes	Petromyzontidae	*Ichthyomyzon greeleyi*	mountain brook lamprey
Petromyzontiformes	Petromyzontidae	*Ichthyomyzon fossor*	northern brook lamprey
Petromyzontiformes	Petromyzontidae	*Ichthyomyzon bdellium*	ohio lamprey
Petromyzontiformes	Petromyzontidae	*Ichthyomyzon unicuspis*	silver lamprey
Petromyzontiformes	Petromyzontidae	*Ichthyomyzon gagei*	southern brook lamprey
Petromyzontiformes	Petromyzontidae	*Lampetra appendix*	american brook lamprey
Petromyzontiformes	Petromyzontidae	*Lampetra camtschatica*	arctic lamprey
Petromyzontiformes	Petromyzontidae	*Lampetra hubbsi*	kern brook lamprey
Petromyzontiformes	Petromyzontidae	*Lampetra similis*	klamath lamprey
Petromyzontiformes	Petromyzontidae	*Lampetra aepyptera*	least brook lamprey
Petromyzontiformes	Petromyzontidae	*Lampetra minima*	miller lake lamprey
Petromyzontiformes	Petromyzontidae	*Lampetra tridentata*	pacific lamprey
Petromyzontiformes	Petromyzontidae	*Lampetra lethophaga*	pit-klamath brook lamprey
Petromyzontiformes	Petromyzontidae	*Lampetra ayresii*	river lamprey
Petromyzontiformes	Petromyzontidae	*Lampetra richardsoni*	western brook lamprey
Petromyzontiformes	Petromyzontidae	*Petromyzon marinus*	sea lamprey
Petromyzontiformes	Petromyzontidae	*Lampetra similis*	klamath river lamprey
Pleuronectiformes	Achiridae	*Trinectes maculatus*	hogchoker
Pleuronectiformes	Paralichthyidae	*Citharichthys spilopterus*	bay whiff
Pleuronectiformes	Paralichthyidae	*Paralichthys lethostigma*	southern flounder
Pleuronectiformes	Pleuronectidae	*Platichthys stellatus*	starry flounder
Pristiformes	Pristidae	*Pristis pectinata*	smalltooth sawfish
Salmoniformes	Osmeridae	*Hypomesus transpacificus*	delta smelt
Salmoniformes	Osmeridae	*Hypomesus olidus*	pond smelt
Salmoniformes	Osmeridae	*Hypomesus pretiosus*	surf smelt
Salmoniformes	Osmeridae	*Hypomesus nipponensis*	wakasagi
Salmoniformes	Osmeridae	*Osmerus mordax*	rainbow smelt
Salmoniformes	Osmeridae	*Spirinchus thaleichthys*	longfin smelt

ORDER	FAMILY	SCIENTIFIC NAME	COMMON NAME
Salmoniformes	Osmeridae	*Thaleichthys pacificus*	eulachon
Salmoniformes	Salmonidae	*Coregonus autumnalis*	arctic cisco
Salmoniformes	Salmonidae	*Coregonus laurettae*	bering cisco
Salmoniformes	Salmonidae	*Coregonus nigripinnis*	blackfin cisco
Salmoniformes	Salmonidae	*Coregonus hoyi*	bloater
Salmoniformes	Salmonidae	*Coregonus nasus*	broad whitefish
Salmoniformes	Salmonidae	*Coregonus artedi*	cisco
Salmoniformes	Salmonidae	*Coregonus johannae*	deepwater cisco
Salmoniformes	Salmonidae	*Coregonus pidschian*	humpback whitefish
Salmoniformes	Salmonidae	*Coregonus kiyi*	kiyi
Salmoniformes	Salmonidae	*Coregonus clupeaformis*	lake whitefish
Salmoniformes	Salmonidae	*Coregonus sardinella*	least cisco
Salmoniformes	Salmonidae	*Coregonus zenithicus*	shortjaw cisco
Salmoniformes	Salmonidae	*Coregonus reighardi*	shortnose cisco
Salmoniformes	Salmonidae	*Oncorhynchus tshawytscha*	chinook salmon
Salmoniformes	Salmonidae	*Oncorhynchus keta*	chum salmon
Salmoniformes	Salmonidae	*Oncorhynchus kisutch*	coho salmon
Salmoniformes	Salmonidae	*Oncorhynchus clarkii*	cutthroat trout
Salmoniformes	Salmonidae	*Oncorhynchus gilae*	gila trout
Salmoniformes	Salmonidae	*Oncorhynchus gorbuscha*	pink salmon
Salmoniformes	Salmonidae	*Oncorhynchus mykiss*	rainbow trout
Salmoniformes	Salmonidae	*Oncorhynchus nerka*	sockeye salmon
Salmoniformes	Salmonidae	*Oncorhynchus clarkii utah*	bonneville cutthroat trout
Salmoniformes	Salmonidae	*Oncorhynchus clarkii lewisi*	westslope cutthroat trout
Salmoniformes	Salmonidae	*Oncorhynchus apache x mykiss*	apache x rainbow trout
Salmoniformes	Salmonidae	*Oncorhynchus mykiss x aguabonita*	rainbow x golden trout
Salmoniformes	Salmonidae	*Prosopium abyssicola*	bear lake whitefish
Salmoniformes	Salmonidae	*Prosopium gemmifer*	bonneville cisco
Salmoniformes	Salmonidae	*Prosopium spilonotus*	bonneville whitefish
Salmoniformes	Salmonidae	*Prosopium williamsoni*	mountain whitefish
Salmoniformes	Salmonidae	*Prosopium coulterii*	pygmy whitefish
Salmoniformes	Salmonidae	*Prosopium cylindraceum*	round whitefish
Salmoniformes	Salmonidae	*Salmo salar*	atlantic salmon
Salmoniformes	Salmonidae	*Salmo trutta*	brown trout
Salmoniformes	Salmonidae	*Salmo X Salvelinus trutta x fontinalis*	tiger trout
Salmoniformes	Salmonidae	*Salvelinus alpinus*	arctic char
Salmoniformes	Salmonidae	*Salvelinus fontinalis*	brook trout
Salmoniformes	Salmonidae	*Salvelinus confluentus*	bull trout
Salmoniformes	Salmonidae	*Salvelinus malma*	dolly varden

ORDER	FAMILY	SCIENTIFIC NAME	COMMON NAME
Salmoniformes	Salmonidae	*Salvelinus namaycush*	lake trout
Salmoniformes	Salmonidae	*Stenodus leucichthys*	inconnu
Salmoniformes	Salmonidae	*Thymallus arcticus*	arctic grayling
Salmoniformes	Salmonidae	*Oncorhynchus tshawytscha*	chinook salmon (yoy)
Salmoniformes	Salmonidae	*Oncorhynchus clarkii clarkii*	coastal cutthroat trout
Salmoniformes	Salmonidae	*Oncorhynchus clarkii pleuriticus*	colorado river cutthroat trout
Salmoniformes	Salmonidae	*Oncorhynchus clarkii x mykiss*	cutbow
Salmoniformes	Salmonidae	*Oncorhynchus clarkii henshawi*	lahontan cutthroat trout
Salmoniformes	Salmonidae	*Oncorhynchus mykiss*	rainbow trout (steelhead)
Salmoniformes	Salmonidae	*Oncorhynchus mykiss gairdneri*	redband rainbow trout
Salmoniformes	Salmonidae	*Oncorhynchus aguabonita*	golden trout
Salmoniformes	Salmonidae	*Salmo salar*	atlantic salmon juvenile
Scorpaeniformes	Cottidae	*Clinocottus acuticeps*	sharpnose sculpin
Scorpaeniformes	Cottidae	*Cottus carolinae*	banded sculpin
Scorpaeniformes	Cottidae	*Cottus extensus*	bear lake sculpin
Scorpaeniformes	Cottidae	*Cottus baileyi*	black sculpin
Scorpaeniformes	Cottidae	*Cottus caeruleomentum*	blue ridge sculpin
Scorpaeniformes	Cottidae	*Cottus aleuticus*	coastrange sculpin
Scorpaeniformes	Cottidae	*Cottus hubbsi*	columbia sculpin
Scorpaeniformes	Cottidae	*Cottus princeps*	klamath lake sculpin
Scorpaeniformes	Cottidae	*Cottus bendirei*	malheur sculpin
Scorpaeniformes	Cottidae	*Cottus klamathensis*	marbled sculpin
Scorpaeniformes	Cottidae	*Cottus marginatus*	margined sculpin
Scorpaeniformes	Cottidae	*Cottus bairdii*	mottled sculpin
Scorpaeniformes	Cottidae	*Cottus hypselurus*	ozark sculpin
Scorpaeniformes	Cottidae	*Cottus beldingii*	paiute sculpin
Scorpaeniformes	Cottidae	*Cottus pitensis*	pit sculpin
Scorpaeniformes	Cottidae	*Cottus girardi*	potomac sculpin
Scorpaeniformes	Cottidae	*Cottus asper*	prickly sculpin
Scorpaeniformes	Cottidae	*Cottus paulus*	pygmy sculpin
Scorpaeniformes	Cottidae	*Cottus perplexus*	reticulate sculpin
Scorpaeniformes	Cottidae	*Cottus gulosus*	riffle sculpin
Scorpaeniformes	Cottidae	*Cottus asperrimus*	rough sculpin
Scorpaeniformes	Cottidae	*Cottus confusus*	shorthead sculpin
Scorpaeniformes	Cottidae	*Cottus greenei*	shoshone sculpin
Scorpaeniformes	Cottidae	*Cottus tenuis*	slender sculpin
Scorpaeniformes	Cottidae	*Cottus cognatus*	slimy sculpin
Scorpaeniformes	Cottidae	*Cottus ricei*	spoonhead sculpin
Scorpaeniformes	Cottidae	*Cottus rhotheus*	torrent sculpin

ORDER	FAMILY	SCIENTIFIC NAME	COMMON NAME
Scorpaeniformes	Cottidae	*Cottus echinatus*	utah lake sculpin
Scorpaeniformes	Cottidae	*Cottus leiopomus*	wood river sculpin
Scorpaeniformes	Cottidae	*Cottus chattahoochee*	chattahoochee sculpin
Scorpaeniformes	Cottidae	*Cottus cf. broadband sculpin*	clinch sculpin
Scorpaeniformes	Cottidae	*Cottus tallapoosae*	tallapoosa sculpin
Scorpaeniformes	Cottidae	*Leptocottus armatus*	pacific staghorn sculpin
Scorpaeniformes	Cottidae	*Myoxocephalus thompsonii*	deepwater sculpin
Scorpaeniformes	Cottidae	*Myoxocephalus quadricornis*	fourhorn sculpin
Scorpaeniformes	Cottidae	*Cottus kanawhae*	kanawha sculpin
Siluriformes	Ariidae	*Ariopsis felis*	hardhead catfish
Siluriformes	Callichthyidae	*Hoplosternum littorale*	brown hoplo
Siluriformes	Clariidae	*Clarias batrachus*	walking catfish
Siluriformes	Doradidae	*Platydoras armatulus*	southern striped raphael
Siluriformes	Ictaluridae	*Ameiurus melas*	black bullhead
Siluriformes	Ictaluridae	*Ameiurus nebulosus*	brown bullhead
Siluriformes	Ictaluridae	*Ameiurus platycephalus*	flat bullhead
Siluriformes	Ictaluridae	*Ameiurus brunneus*	snail bullhead
Siluriformes	Ictaluridae	*Ameiurus serracanthus*	spotted bullhead
Siluriformes	Ictaluridae	*Ameiurus catus*	white catfish
Siluriformes	Ictaluridae	*Ameiurus natalis*	yellow bullhead
Siluriformes	Ictaluridae	*Ictalurus furcatus*	blue catfish
Siluriformes	Ictaluridae	*Ictalurus punctatus*	channel catfish
Siluriformes	Ictaluridae	*Ictalurus lupus*	headwater catfish
Siluriformes	Ictaluridae	*Ictalurus pricei*	yaqui catfish
Siluriformes	Ictaluridae	*Noturus funebris*	black madtom
Siluriformes	Ictaluridae	*Noturus miurus*	brindled madtom
Siluriformes	Ictaluridae	*Noturus phaeus*	brown madtom
Siluriformes	Ictaluridae	*Noturus taylori*	caddo madtom
Siluriformes	Ictaluridae	*Noturus furiosus*	carolina madtom
Siluriformes	Ictaluridae	*Noturus flavater*	checkered madtom
Siluriformes	Ictaluridae	*Noturus elegans*	elegant madtom
Siluriformes	Ictaluridae	*Noturus munitus*	frecklebelly madtom
Siluriformes	Ictaluridae	*Noturus nocturnus*	freckled madtom
Siluriformes	Ictaluridae	*Noturus hildebrandi*	least madtom
Siluriformes	Ictaluridae	*Noturus insignis*	margined madtom
Siluriformes	Ictaluridae	*Noturus eleutherus*	mountain madtom
Siluriformes	Ictaluridae	*Noturus placidus*	neosho madtom
Siluriformes	Ictaluridae	*Noturus stigmosus*	northern madtom
Siluriformes	Ictaluridae	*Noturus gilberti*	orangefin madtom
Siluriformes	Ictaluridae	*Noturus lachneri*	ouachita madtom
Siluriformes	Ictaluridae	*Noturus albater*	ozark madtom
Siluriformes	Ictaluridae	*Noturus stanauli*	pygmy madtom

ORDER	FAMILY	SCIENTIFIC NAME	COMMON NAME
Siluriformes	Ictaluridae	*Noturus trautmani*	scioto madtom
Siluriformes	Ictaluridae	*Noturus exilis*	slender madtom
Siluriformes	Ictaluridae	*Noturus baileyi*	smoky madtom
Siluriformes	Ictaluridae	*Noturus leptacanthus*	speckled madtom
Siluriformes	Ictaluridae	*Noturus flavus*	stonecat
Siluriformes	Ictaluridae	*Noturus gyrinus*	tadpole madtom
Siluriformes	Ictaluridae	*Noturus flavipinnis*	yellowfin madtom
Siluriformes	Ictaluridae	*Pylodictis olivaris*	flathead catfish
Siluriformes	Ictaluridae	*Satan eurystomus*	widemouth blindcat
Siluriformes	Ictaluridae	*Trogloglanis pattersoni*	toothless blindcat
Siluriformes	Loricariidae	*Hypostomus plecostomus*	suckermouth catfish
Siluriformes	Loricariidae	*Pterygoplichthys pardalis*	amazon sailfin catfish
Siluriformes	Loricariidae	*Pterygoplichthys multiradiatus*	orinoco sailfin catfish
Siluriformes	Loricariidae	*Pterygoplichthys anisitsi*	southern sailfin catfish
Siluriformes	Loricariidae	*Pterygoplichthys disjunctivus*	vermiculated sailfin catfish
Siluriformes	Ictaluridae	*Noturus fasciatus*	saddled madtom
Synbranchiformes	Synbranchidae	*Monopterus albus*	asian swamp eel

Table D-2. Standard Common and Scientific Names of Amphibians[1]

ORDER	FAMILY	SCIENTIFIC NAME	COMMON NAME
Anura	Ascaphidae	*Ascaphus truei*	tailed frog
Anura	Ascaphidae	*Ascaphus truei*	tailed frog (tadpole)
Anura	Bufonidae	*Bufo boreas*	western toad
Anura	Bufonidae	*Bufo microscaphus*	arizona toad
Anura	Bufonidae	*Bufo hemiophrys*	canadian toad
Anura	Bufonidae	*Bufo punctatus*	red-spotted toad
Anura	Bufonidae	*Bufo woodhousii*	woodhouse's toad
Anura	Hylidae	*Hyla arenicolor*	canyon treefrog
Anura	Hylidae	*Pseudacris maculata*	boreal chorus frog
Anura	Hylidae	*Pseudacris cadaverina*	california treefrog
Anura	Hylidae	*Pseudacris regilla*	pacific tree frog
Anura	Pipidae	*Xenopus laevis*	african clawed frog
Anura	Ranidae	*Lithobates pipiens*	leopard frog
Anura	Ranidae	*Lithobates blairi*	plains leopard frog
Anura	Ranidae	*Lithobates chiricahuensis*	chiricahua leopard frog
Anura	Ranidae	*Rana catesbeiana*	bullfrog
Anura	Ranidae	*Rana catesbeiana*	bullfrog tadpole
Anura	Ranidae	*Rana aurora*	red-legged frog
Anura	Ranidae	*Rana cascadae*	cascade frog
Anura	Ranidae	*Rana luteiventris*	columbia spotted frog
Anura	Ranidae	*Rana boylii*	foothill yellow-legged frog
Anura	Ranidae	*Rana clamitans*	green frog
Anura	Ranidae	*Rana yavapaiensis*	lowland leopard frog
Anura	Ranidae	*Rana muscosa*	mountain yellow-legged frog
Anura	Ranidae	*Rana pretiosa*	spotted frog
Anura	Ranidae	*Rana sylvatica*	wood frog
Caudata	Ambystomatidae	*Ambystoma macrodactylum*	longtoed salamander
Caudata	Ambystomatidae	*Dicamptodon tenebrosus*	pacific giant salamander
Caudata	Ambystomatidae	*Dicamptodon ensatus*	california giant salamander
Caudata	Ambystomatidae	*Dicamptodon aterrimus*	idaho giant salamander
Caudata	Rhyacotritonidae	*Rhyacotriton kezeri*	columbia torrent salamander
Caudata	Salamandridae	*Taricha granulosa*	rough-skinned newt
Caudata	Salamandridae	*Taricha torosa*	california newt

[1] Although not required, you may note amphibians and reptiles captured on the fish collection form.