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Re: Notice of changes to the LTRMP fish component database

On 15 July 2003, I notified you that we would be initiating several database reforms within the fisheries component of the LTRMP that were discussed and agreed upon at our annual component meeting in La Crosse in April 2003. The overall goal of these reforms is to make our data more amenable to analytical efforts, data sharing efforts, quality assurance audits and annual reporting, and future scientific reviews of the component. Within my 15 July 2003 memo, I outlined the planned reforms that would directly affect you, provided my rationale, highlighted actions that were to be taken, and suggested protocol changes that would result in more standardized central database use, while also permitting de-centralized flexibility for soon-to-be unsupported items. Several recent changes in how we do business (e.g., shift from data entry contractor to electronic data capture in the field; an increased emphasis on analytical projects; development of alternative ways to serve our data), have provided the incentive and ability to begin implementing these reforms. Over the past several months, we have been actively implementing these reforms. With this memo, I am formally notifying you that the reforms are now complete. Most of these changes will be largely transparent to you. Our reforms can be classified into 3 general categories:

- 1) Separate core monitoring observations (Project code M-) from all other observations. Specifically:
 - a) Create a Level 1 database containing only Project Code M- records and provide public access to it.
 - b) Create a Level 2 database containing only data from current year collections that are undergoing quality assurance audits.
 - c) Create a Level 3 database that contains all Special Project data – do not make public.

Separating these data will expedite quality assurance audits and annual reporting, and simplify the development of new tools to serve our data to resource managers, scientists, and the public. Level 2 and 3 databases are not public and are USERID and PASSWORD protected on UMESC servers. Please contact me by phone for the appropriate permissions if you have not already done so and you need access to these data.

- 2) Remove turtle and invertebrate observations from the Level 1 database (see Table 1 for a list). Specifically:
- a) Create a new special project for turtle data in the Level 3 database and transport all turtle observations made during routine monitoring (Project Code M-) to this new special project (TURT).
 - b) Delete all invertebrate observations from the Level 1 database and do not provide future support for their collection.

Removal of these observations from the Level 1 database alters some information in the database, so that particular fields (specifically Number of Fish on Sheet and Total Fish Collected) will no longer coincide with archived hard copies of the original datasheets. Rather than requiring you to make corrections to the original datasheets, I ask that you please include a copy of this memo in your datasheet archive files. Accompanying this memo is a listing of all impacted barcodes, the turtle or invertebrate observations that were extracted from the Level 1 database, and the number of observations extracted. Print this file and place it with this memo in your archives. In this way, this document serves as a global correction to the original datasheets. Differences between the digital database and the original datasheets can be simply reconciled by referencing this document.

- 3) Re-standardize protocols concerning Project Codes and Fishcodes (see Table 2 and Table 3 for a list, respectively). Specifically:
- a) Implement some central control on Special Projects so that each project is assured a unique code within the database (this has been a problem in the past; note addition of a temporary code for emergency monitoring “EMER” in Table 2).
 - b) Re-standardize protocols concerning acceptable Fishcodes (globally update to a standardized list that only permits species or family level identification – no genus or other levels of identification permitted – and standardize special characters used in the codes).

This reform ensures that we will never again have duplicate Project Codes in our database and coordinates the use of these codes across the component. Re-standardization of Fishcodes ensures a consistent notion of species throughout our database and will significantly reduce logic errors associated with intermediate levels of identification in subsequent analyses and reports. Staff is still free to classify at intermediate levels of identification, but must do so in the COMMENTS field. Codes for intermediate levels of identification will not be supported in the future.

We have been through a lot of changes the past 2 years and this is but one more (albeit minor in the grand scheme). I have followed the guidance and ideas of the entire component in implementing these changes and I recognize that differences in opinion exist across the program. However, I also believe that these changes reflect the majority opinion within the program. While they may take some getting used to, I think that you will find that in the end, these changes will make recording our data, quality assuring our data, maintaining our data, and serving our data much easier, consequently freeing up time to use our data. Certainly, given all of the changes over the past few years, we need to revisit our procedures manual. This will be a priority over the next year. We will detail the specifics of these changes and their impact on your operations at our next component meeting this spring. In the meantime, should you have any questions or concerns, please do not hesitate to contact me.

Table 1. Listing of turtle and invertebrate taxon codes (fishcodes) removed from the LTRMP fish component Level 1 database (Jan 2004). Turtle observations were placed in a new special project named TURT within the Level 3 database. Invertebrates were permanently deleted from the Level 1 browser and will no longer be supported centrally, but may be supported locally at each field station's discretion using available database utilities.

Code	Common Name
ASNT	Alligator snapping turtle (ASNT)
BLDT	Blanding's turtle (BLDT)
CMKT	Common musk turtle (CMKT)
CMPT	Common map turtle (CMPT)
CSNT	Common snapping turtle (CSNT)
FMPT	False Map turtle (FMPT)
IMDT	Illinois mud turtle (IMDT)
MMPT	Mississippi map turtle (MMPT)
MPTT	Midland painted turtle (MPTT)
OMPT	Ouachita map turtle (OMPT)
RCOT	River cooter turtle (RCOT)
RESL	Red-eared slider turtle (RESL)
SMSS	Midland smooth softshell turtle (SMSS)
SPSS	Spiny softshell turtle (SPSS)
WODT	Wood turtle (WODT)
WPTT	Western painted turtle (WPTT)
OHSH	Ohio shrimp (OHSH)
ASIA	Asiatic clam (ASIA)
CSFY	Caddis fly (CSFY)
CYFH	Crayfish (CYFH)
DBFY	Dobson fly (DBFY)
DGFY	Dragon fly (DGFY)
DMFY	Damsel fly (DMFY)
GLSH	Glass shrimp (GLSH)
HHWM	Horsehair worm (HHWM)
HXFY	Hexagenia fly (HXFY)
HXMY	Hexagenia mayfly (HXMY)
LECH	Leech (LECH)
LICE	Gill lice (LICE)
MDGS	Midges (MDGS)
MQTL	Mosquito larvae (MQTL)
MYFY	Mayfly (MYFY)
PILL	Pillbug (PILL)
PLAN	Planorbid snail (PLAN)
PSEU	Pseudiron centrallis--riverene mayfly (PSEU)
SCUD	Amphipod (SCUD)
SPIR	Spiroid snails (SPIR)
STFY	Stonefly (STFY)

Table 2. Listing of LTRMP fish component Project Codes in the Level 1 and 3 databases. Any code beginning with an “M-“ will be maintained in the Level 1 database. All other project codes are maintained in the Level 3 database.

LTRMP COMPONENT	FIELD STATION	PROJECT CODE	DATE	ID EDITER	DATE END	PROJECT DESCRIPT	CONTACT
Fish	6	B-005	05/13/1996	adb0	07/17/2000	Peoria Lake Illinois River HREP biological response monitoring	Blodgett D.
Fish	6	B-006	05/11/1998	adb0	10/02/2002	Lake Chautauqua Illinois River HREP biological response monitoring	Randy Burkhardt
Fish	0	B-009	09/21/1992	adb0	09/24/1993	Pool 9 island HREP biological response monitoring	Gutreuter S.
Fish	6	B-010	06/17/1999	adb0	09/16/1999	Pool LG,	Kevin Irons
Fish	3	E-	11/07/1989	adb0	11/14/1989	Pool 13, Experimental electrofishing with non-standard power settings	Mel Bowler
Fish	5	E-005	07/26/1993	adb0	09/02/1993	Experimental floodplain sampling (1993 flood)	Randy Burkhardt
Fish	1	E-007	08/05/1993	adb0	09/02/1993	Experimental mini fyke and tandem mini fyke netting	Randy Burkhardt
Fish	3,4	E-010	06/28/1993	adb0	10/18/1994	Experimental floodplain sampling (1993 flood)	Gutreuter S.
Fish	3	E-011	07/14/1993	adb0	07/27/1993	Green Island (normally backwater isolated, 1993 - BWC) sampling 1993	Randy Burkhardt
Fish	5	E-012	10/27/1993	deh0		Experimental sampling in a "blew hole" created by the 1993 flood	Petersen M.
Fish	5	E-013	06/24/1994	deh0		Paddlefish jawbone collections from commercial fishers, open river reach	Hrabik R.
Fish	5	E-014	08/04/1994	deh0	10/18/1994	Experimental mini-fyke sets below wingdams, 1994, open river	Petersen M.
Fish	5	E-015	03/27/1996	adb0	12/16/1997	Early season (pre-June) experimental random sampling, open river	Randy Burkhardt
Fish	5	E-016	12/15/1997	adb0		MICRA Pallid sturgeon study	Petersen M.
Fish	1,2,4,5,6	E-017	05/13/1996	deh0	10/16/1996	Experimental offshore fyke and mini fyke sets	Gutreuter S.
Fish	5	E-019	07/17/1997	adb0	11/27/2000	Non-standardized LTRMP method exploratory sampling(added by 07/25/97 deh0)	Herzog D.
Fish	3	E-020	10/18/1993	adb0	10/08/2001	Night electrofishing walleye/sauger only, fall survey	Randy Burkhardt
Fish	5	E-021	07/13/1998	adb0	11/03/1998	chub project field station 5	Randy Burkhardt
Fish	6	E-022	06/29/1993	adb0	09/21/2000	Pool LG, State-managed area (Anderson Lake) Illinois River Monitoring	Kevin Irons
Fish	5	E-023	11/01/1999	adb0	09/14/2001	Macrohyboscopus chub (overtarget) sampling, gillnetting and expmn'tl trawl, overwintering for sturgeon	Dave Herzog
Fish	4	E-024	06/17/1998	adb0	10/03/2001	Illinois River Electrofishing Study	Eric Ratcliff

LTRMP COMPONENT	FIELD STATION	PROJECT CODE	DATE	ID EDITER	DATE END	PROJECT DESCRIPT	CONTACT
Fish	2	E-025	09/13/1994	deh0	09/13/1994	Freshwater drum otoliths collected from a commercial seiner in Pool 8 during routine monitoring. Project code was in error and changed to a non-LTRMP sampling project code 8/6/2002. Andy Bartels (WIDNR) has possession of bony structures and data.	Brian S. Ickes
Fish	1,2,3,4,5,6	M-	08/21/1991	adb0		Routine LTRMP monitoring	Randy Burkhardt
Fish	6	M-002	06/15/1992	deh0	10/29/1992	Largemouth bass tagging study	Raibley P.
Fish	1,2,3,4,5	M-003	07/01/1992	adb0	10/14/1992	Hoop net sets below wingdams, all Mississippi river reaches	Gutreuter S.
Fish	3	M-004	06/23/1992	deh0	10/20/1992	Night electrofishing at LTRMP sites	Gutreuter S.
Fish	2,3	M-005	08/11/1992	deh0	09/29/1992	Walleye branding/stocking, UDF1=1=stocked upper pool, UDF1=2=stocked mid-pool	Gent R.
Fish	2,3,4,5,6	M-006	09/14/1992	adb0	10/27/1994	Freshwater drum otoliths collected during routine monitoring for age and growth studies	Randy Burkhardt
Fish	0	R-001	07/07/1993	deh0	07/12/1993		Randy Burkhardt
Fish	5	R-009	03/17/1993	adb0	05/16/1995	Tributary fish movement study (Big Muddy River and Headwaters Diversion Channel)	Randy Burkhardt
Fish	6	R-010	06/27/2000	adb0	09/21/2000	State-managed area (Anderson Lake) Illinois River Monitoring	Randy Burkhardt
Fish	5	R-015	06/27/1994	deh0	10/14/1994	Biological response monitoring at new wingdams open river	Petersen M.
Fish	5	R-016	09/25/1996	deh0		St. Louis COE side channel evaluation(11/27/96)	Petersen M.
Fish	5	R-019	09/13/2000	adb0	09/13/2000	Pool 19 Outpool sampling using experimental trawl - sponsored by Todd Koel	Randy Burkhardt
Fish	6	R-020	10/02/1995	adb0	09/12/2000	Illinois electrofishing comparison study	Blodgett D.
Fish	7	R-021	10/02/1995	adb0	09/15/1997	Illinois River grass carp study	Blodgett D.
Fish	7	R-022	08/06/1996	adb0	12/04/1997	Main Channel Trawling Study	Randy Burkhardt
Fish	6	R-030	08/31/1998	adb0	09/23/1998	INHS Illinois River Long term electrofishing	Todd Koel
Fish	1,2,3,4,5,6	R-031	06/15/2000	adb0	10/31/2000	Outpool sampling using day electrofishing and seining - sponsored by Todd Koel, Pools 3, 5, 12, 14, 19, 20, and OR	Todd Koel
Fish	5	R-032	09/18/2001	adb0	09/26/2001	Overtarget study, comparing main channel trawling to the benthic trawling	Dave Herzog

LTRMP COMPONENT	FIELD STATION	PROJECT CODE	DATE	ID EDITER	DATE END	PROJECT DESCRIPT	CONTACT
Fish	1,2,3,4,5,6	TURT	01/01/2004	bsi0		All Project M- turtle observations placed in this special project. In the future, all turtle observations will be maintained under this Project Code	Brian S. Ickes
Fish	1,2,3,4,5,6	EMER	01/01/2004	bsi0		Temporary dumping ground for emergency monitoring (no time to notify UMESC and get a project code assigned to the effort). A permanent code will be generated for any such data at a later date.	Brian S. Ickes

Table 3. Listing of re-standardized and acceptable Fishcodes within the LTRMP fish component.

SPECIES_CODE	COMMON_NAME	SORT_FISH_TURTLE	SCIENTIFIC_NAME	FAMILY_NAME
ABLP	American brook lamprey (ABLP)	1	Lampetra appendix	Petromyzontidae
ALGR	Alligator gar (ALGR)	1	Lepisosteus spatula	Lepisosteidae
ALSD	Alabama shad (ALSD)	1	Alosa alabamae	Clupeidae
ALWF	Alewife (ALWF)	1	Alosa pseudoharengus	Clupeidae
AMEL	American eel (AMEL)	1	Anguilla rostrata	Anguillidae
BBDR	Bluebreast darter (BBDR)	1	Etheostoma camurum	Percidae
BCSN	Blackchin shiner (BCSN)	1	Notropis heterodon	Cyprinidae
BCWC	Black crappie x white crappie hybrid (BCWC)	1	Pomoxis annularis x P. nigromaculatus	Centrarchidae
BDDR	Banded darter (BDDR)	1	Etheostoma zonale	Percidae
BDKF	Banded killifish (BDKF)	1	Fundulus diaphanus	Cyprinodontidae
BDMT	Brindled madtom (BDMT)	1	Noturus miurus	Ictaluridae
BDSN	Bleeding shiner (BDSN)	1	Luxilus zonatus	Cyprinidae
BDSP	Banded sculpin (BDSP)	1	Cottus carolinae	Cottidae
BECB	Bigeye chub (BECB)	1	Notropis amblops	Cyprinidae
BESN	Bigeye shiner (BESN)	1	Notropis boops	Cyprinidae
BGLE	Bluegill x longear sunfish hybrid (BGLE)	1	Lepomis macrochirus x L. megalotis	Centrarchidae
BGOS	Bluegill x orangespotted sunfish hybrid (BGOS)	1	Lepomis macrochirus x L. humilis	Centrarchidae
BGRS	Bluegill x redear sunfish hybrid (BGRS)	1	Lepomis macrochirus x L. microlophus	Centrarchidae
BGWM	Bluegill x warmouth hybrid (BGWM)	1	Lepomis macrochirus x L. gulosus	Centrarchidae
BHCP	Bighead carp (BHCP)	1	Hypophthalmichthys nobilis	Cyprinidae
BHMW	Bullhead minnow (BHMW)	1	Pimephales vigilax	Cyprinidae
BHSN	Bluehead shiner (BHSN)	1	Notropis hubbsi	Cyprinidae
BKBF	Black buffalo (BKBF)	1	Ictiobus niger	Catostomidae
BKBH	Black bullhead (BKBH)	1	Ameiurus melas	Ictaluridae
BKCP	Black crappie (BKCP)	1	Pomoxis nigromaculatus	Centrarchidae
BKRH	Black redhorse (BKRH)	1	Moxostoma duquesnei	Catostomidae
BKSB	Brook stickleback (BKSB)	1	Culaea inconstans	Gasterosteidae
BKSS	Brook silverside (BKSS)	1	Labidesthes sicculus	Atherinidae
BKTT	Brook trout (BKTT)	1	Salvelinus fontinalis	Salmonidae
BLCF	Blue catfish (BLCF)	1	Ictalurus furcatus	Ictaluridae
BLGL	Bluegill (BLGL)	1	Lepomis macrochirus	Centrarchidae
BLSK	Bull shark (BLSK)	1	Carcharhinus leucas	Carcharhinidae
BLTR	Bloater (BLTR)	1	Coregonus hoyi	Salmonidae
BMBF	Bigmouth buffalo (BMBF)	1	Ictiobus cyprinellus	Catostomidae
BMSN	Bigmouth shiner (BMSN)	1	Notropis dorsalis	Cyprinidae
BNBH	Brown bullhead (BNBH)	1	Ameiurus nebulosus	Ictaluridae
BNDC	Blacknose dace (BNDC)	1	Rhinichthys atratulus	Cyprinidae
BNDR	Bluntnose darter (BNDR)	1	Etheostoma chlorosomum	Percidae
BNMW	Bluntnose minnow (BNMW)	1	Pimephales notatus	Cyprinidae
BNSN	Blacknose shiner (BNSN)	1	Notropis heterolepis	Cyprinidae
BNTT	Brown trout (BNTT)	1	Salmo trutta	Salmonidae
BPSF	Banded pygmy sunfish (BPSF)	1	Elassoma zonatum	Centrarchidae
BPTM	Blackspotted topminnow (BPTM)	1	Fundulus olivaceus	Cyprinodontidae
BRBT	Burbot (BRBT)	1	Lota lota	Gadidae

BSDR	Blackside darter (BSDR)	1 <i>Percina maculata</i>	Percidae
BSMW	Brassy minnow (BSMW)	1 <i>Hybognathus hankinsoni</i>	Cyprinidae
BTSF	Bantam sunfish (BTSF)	1 <i>Lepomis symmetricus</i>	Centrarchidae
BTSN	Blacktail shiner (BTSN)	1 <i>Cyprinella venusta</i>	Cyprinidae
BTM	Blackstripe topminnow (BTM)	1 <i>Fundulus notatus</i>	Cyprinodontidae
BUSK	Blue sucker (BUSK)	1 <i>Cycleptus elongatus</i>	Catostomidae
BWFN	Bowfin (BWFN)	1 <i>Amia calva</i>	Amiidae
CARP	Common carp (CARP)	1 <i>Cyprinus carpio</i>	Cyprinidae
CCGF	Common carp x goldfish hybrid (CCGF)	1 <i>Carassius auratus</i> x <i>C. carpio</i>	Cyprinidae
CHSM	Coho salmon (CHSM)	1 <i>Oncorhynchus kisutch</i>	Salmonidae
CKCB	Creek chub (CKCB)	1 <i>Semotilus atromaculatus</i>	Cyprinidae
CKCS	Creek chubsucker (CKCS)	1 <i>Erinomyzon oblongus</i>	Catostomidae
CLDR	Crystal darter (CLDR)	1 <i>Ammocrypta asprella</i>	Percidae
CLSR	Central stoneroller (CLSR)	1 <i>Camptostoma anomalum</i>	Cyprinidae
CMMW	Central mudminnow (CMMW)	1 <i>Umbra limi</i>	Umbridae
CMSN	Common shiner (CMSN)	1 <i>Luxilus cornutus</i>	Cyprinidae
CNCF	Channel catfish (CNCF)	1 <i>Ictalurus punctatus</i>	Ictaluridae
CNLP	Chestnut lamprey (CNLP)	1 <i>Ichthyomyzon castaneus</i>	Petromyzontidae
CNPK	Chain pickerel (CNPK)	1 <i>Esox niger</i>	Esocidae
CNSN	Channel shiner (CNSN)	1 <i>Notropis wickliffi</i>	Cyprinidae
CPDR	Cypress darter (CPDR)	1 <i>Etheostoma proelaire</i>	Percidae
CSCO	Cisco (CSCO)	1 <i>Coregonus artedii</i>	Salmonidae
DWSP	Deepwater sculpin (DWSP)	1 <i>Myoxocephalus thompsoni</i>	Cottidae
DYDR	Dusky darter (DYDR)	1 <i>Percina sciera</i>	Percidae
ERSN	Emerald shiner (ERSN)	1 <i>Notropis atherinoides</i>	Cyprinidae
ESDR	Eastern sand darter (ESDR)	1 <i>Ammocrypta pellucida</i>	Percidae
FHCB	Flathead chub (FHCB)	1 <i>Platygobio gracilis</i>	Cyprinidae
FHCF	Flathead catfish (FHCF)	1 <i>Pylodictis olivaris</i>	Ictaluridae
FHMW	Fathead minnow (FHMW)	1 <i>Pimephales promelas</i>	Cyprinidae
FKMT	Freckled madtom (FKMT)	1 <i>Noturus nocturnus</i>	Ictaluridae
FLER	Flier (FLER)	1 <i>Centrarchus macropterus</i>	Centrarchidae
FTDR	Fantail darter (FTDR)	1 <i>Etheostoma flabellare</i>	Percidae
FWDM	Freshwater drum (FWDM)	1 <i>Aplodinotus grunniens</i>	Sciaenidae
GDEY	Goldeye (GDEY)	1 <i>Hiodon alosoides</i>	Hiodontidae
GDFH	Goldfish (GDFH)	1 <i>Carassius auratus</i>	Cyprinidae
GDRH	Golden redhorse (GDRH)	1 <i>Moxostoma erythrurum</i>	Catostomidae
GDSN	Golden shiner (GDSN)	1 <i>Notemigonus crysoleucas</i>	Cyprinidae
GNSF	Green sunfish (GNSF)	1 <i>Lepomis cyanellus</i>	Centrarchidae
GSBG	Green sunfish x bluegill hybrid (GSBG)	1 <i>L. cyanellus</i> x <i>L. macrochirus</i>	Centrarchidae
GSCP	Grass carp (GSCP)	1 <i>Ctenopharyngodon idella</i>	Cyprinidae
GSDR	Greenside darter (GSDR)	1 <i>Etheostoma blennioides</i>	Percidae
GSLE	Green x longear sunfish hybrid (GSLE)	1 <i>L. cyanellus</i> x <i>L. megalotis</i>	Centrarchidae
GSOS	Green x orangespotted sunfish hybrid (GSOS)	1 <i>L. cyanellus</i> x <i>L. humilis</i>	Centrarchidae
GSPK	Grass pickerel (GSPK)	1 <i>Esox americanus vermiculatus</i>	Esocidae
GSPS	Green sunfish x pumpkinseed hybrid (GSPS)	1 <i>L. cyanellus</i> x <i>L. gibbosus</i>	Centrarchidae
GSRS	Green x redear sunfish hybrid (GSRS)	1 <i>L. cyanellus</i> x <i>L. microlophus</i>	Centrarchidae
GSWM	Green sunfish x warmouth hybrid (GSWM)	1 <i>L. cyanellus</i> x <i>L. gulosus</i>	Centrarchidae

GTRH	Greater redhorse (GTRH)	1 Moxostoma valenciennesi	Catostomidae
GTSN	Ghost shiner (GTSN)	1 Notropis buchanani	Cyprinidae
GVCB	Gravel chub (GVCB)	1 Erimystax x-punctatus	Cyprinidae
GZSD	Gizzard shad (GZSD)	1 Dorosoma cepedianum	Clupeidae
HFCS	Highfin carpsucker (HFCS)	1 Carpiodes velifer	Catostomidae
HHCB	Hornyhead chub (HHCB)	1 Nocomis biguttatus	Cyprinidae
HQDR	Harlequin darter (HQDR)	1 Etheostoma histrio	Percidae
ICSN	Ironcolor shiner (ICSN)	1 Notropis chalybaeus	Cyprinidae
IDSS	Inland silverside (IDSS)	1 Menidia beryllina	Atherinidae
IODR	Iowa darter (IODR)	1 Etheostoma exile	Percidae
JYDR	Johnny darter (JYDR)	1 Etheostoma nigrum	Percidae
LBLP	Least brook lamprey (LBLP)	1 Lampetra aepyptera	Petromyzontidae
LESF	Longear sunfish (LESF)	1 Lepomis megalotis	Centrarchidae
LGPH	Logperch (LGPH)	1 Percina caprodes	Percidae
LKCB	Lake chub (LKCB)	1 Couesius plumbeus	Cyprinidae
LKCS	Lake chubsucker (LKCS)	1 Erimyzon sucetta	Catostomidae
LKSG	Lake sturgeon (LKSG)	1 Acipenser fulvescens	Acipenseridae
LMBS	Largemouth bass (LMBS)	1 Micropterus salmoides	Centrarchidae
LNDC	Longnose dace (LNDC)	1 Rhinichthys cataractae	Cyprinidae
LNGR	Longnose gar (LNGR)	1 Lepisosteus osseus	Lepisosteidae
LNSK	Longnose sucker (LNSK)	1 Catostomus catostomus	Catostomidae
LNST	Longnose x spotted gar hybrid (LNST)	1 Lepisosteus osseus x oculatus	Lepisosteidae
LSSR	Largescale stoneroller (LSSR)	1 Campostoma oligolepis	Cyprinidae
LTDR	Least darter (LTDR)	1 Etheostoma microperca	Percidae
MDDR	Mud darter (MDDR)	1 Etheostoma asprigene	Percidae
MDSP	Mottled sculpin (MDSP)	1 Cottus bairdi	Cottidae
MGNP	Tiger muskellunge (MGNP)	1 Esox masquinongy x lucius	Esocidae
MMSN	Mimic shiner (MMSN)	1 Notropis volucellus	Cyprinidae
MNEY	Mooneye (MNEY)	1 Hiodon tergisus	Hiodontidae
MQTF	Western mosquitofish (MQTF)	1 Gambusia affinis	Poeciliidae
MSDR	Missouri saddled darter (MSDR)	1 Etheostoma tetrazonum	Percidae
MSKG	Muskellunge (MSKG)	1 Esox masquinongy	Esocidae
MSSS	Mississippi silverside (MSSS)	1 Menidia audens	Atherinidae
MTMT	Mountain madtom (MTMT)	1 Noturus eleutherus	Ictaluridae
NBLP	Northern brook lamprey (NBLP)	1 Ichthyomyzon fossor	Petromyzontidae
NFSH	No fish caught (NFSH)	1 Nocatchus pisces	Nocatchtoda
NHSK	Northern hog sucker (NHSK)	1 Hypentelium nigricans	Catostomidae
NRBD	Northern redbelly dace (NRBD)	1 Phoxinus eos	Cyprinidae
NSSB	Ninespine stickleback (NSSB)	1 Pungitius pungitius	Gasterosteidae
NTMT	Northern madtom (NTMT)	1 Noturus stigmosus	Ictaluridae
NTPK	Northern pike (NTPK)	1 Esox lucius	Esocidae
NTSF	Northern studfish (NTSF)	1 Fundulus catenatus	Cyprinodontidae
NWSP	New Species (NWSP)	1	
OSLE	Orangespotted x longear sunfish hybrid (OSLE)	1 L. humilis x L. megalotis	Centrarchidae
OSSF	Orangespotted sunfish (OSSF)	1 Lepomis humilis	Centrarchidae
OTDR	Orangethroat darter (OTDR)	1 Etheostoma spectabile	Percidae
OZMW	Ozark minnow (OZMW)	1 Notropis nubilus	Cyprinidae

PDFH	Paddlefish (PDFH)	1 Polyodon spathula	Polyodontidae
PDSG	Pallid sturgeon (PDSG)	1 Scaphirhynchus albus	Acipenseridae
PDSN	Pallid shiner (PDSN)	1 Notropis amnis	Cyprinidae
PGMW	Pugnose minnow (PGMW)	1 Opsopoeodus emiliae	Cyprinidae
PLDC	Pearl dace (PLDC)	1 Margariscus margarita	Cyprinidae
PNMW	Plains minnow (PNMW)	1 Hybognathus placitus	Cyprinidae
PNSD	Pumpkinseed (PNSD)	1 Lepomis gibbosus	Centrarchidae
PNSN	Pugnose shiner (PNSN)	1 Notropis anogenus	Cyprinidae
PRPH	Pirate perch (PRPH)	1 Aphredoderus sayanus	Aphredoderidae
PSBG	Pumpkinseed x bluegill hybrid (PSBG)	1 L. gibbosus x L. macrochirus	Centrarchidae
PSOS	Pumpkinseed x orangespotted sunfish hybrid (PSOS)	1 L. gibbosus x L. humilis	Centrarchidae
PSWM	Pumpkinseed x warmouth hybrid (PSWM)	1 L. gibbosus x L. gulosus	Centrarchidae
QLBK	Quillback (QLBK)	1 Carpiodes cyprinus	Catostomidae
RBDR	Rainbow darter (RBDR)	1 Etheostoma caeruleum	Percidae
RBSN	Ribbon shiner (RBSN)	1 Notropis fumeus	Cyprinidae
RBST	Rainbow smelt (RBST)	1 Osmerus mordax	Osmeridae
RBTT	Rainbow trout (RBTT)	1 Oncorhynchus mykiss	Salmonidae
RDSN	Red shiner (RDSN)	1 Cyprinella lutrensis	Cyprinidae
RESF	Redear sunfish (RESF)	1 Lepomis microlophus	Centrarchidae
RFSN	Redfin shiner (RFSN)	1 Lythrurus umbratilis	Cyprinidae
RKBS	Rock bass (RKBS)	1 Ambloplites rupestris	Centrarchidae
RRDR	River darter (RRDR)	1 Percina shumardi	Percidae
RSSF	Redspotted sunfish	1 Lepomis miniatus	Centrarchidae
RSSN	Rosefin shiner (RSSN)	1 Lythrurus ardens	Cyprinidae
RSWM	Redear sunfish x warmouth hybrid (RSWM)	1 L. microlophus x L. gulosus	Centrarchidae
RUDD	Rudd (RUDD)	1 Scardinius erythrophthalmus	Cyprinidae
RVCB	River chub (RVCB)	1 Nocomis micropogon	Cyprinidae
RVCS	River carsucker (RVCS)	1 Carpiodes carpio	Catostomidae
RVRH	River redhorse (RVRH)	1 Moxostoma carinatum	Catostomidae
RVSN	River shiner (RVSN)	1 Notropis blennioides	Cyprinidae
RYSN	Rosyface shiner (RYSN)	1 Notropis rubellus	Cyprinidae
SBSN	Silverband shiner (SBSN)	1 Notropis shumardi	Cyprinidae
SBWB	Striped x white bass hybrid (SBWB)	1 M. chrysops x M. saxatilis	Percichthyidae
SCSN	Steelcolor shiner (SCSN)	1 Cyprinella whipplei	Cyprinidae
SDBS	Striped bass (SDBS)	1 Morone saxatilis	Percichthyidae
SDMT	Slender madtom (SDMT)	1 Noturus exilis	Ictaluridae
SELP	Sea lamprey (SELP)	1 Petromyzon marinus	Petromyzontidae
SFCB	Sicklefin chub (SFCB)	1 Macrhybopsis meeki	Cyprinidae
SFSN	Spotfin shiner (SFSN)	1 Cyprinella spiloptera	Cyprinidae
SGCB	Sturgeon chub (SGCB)	1 Macrhybopsis gelida	Cyprinidae
SGCF	Spring cavefish (SGCF)	1 Chologaster agassizi	Amblyopsidae
SGDR	Stargazing darter (SGDR)	1 Percina uranidie	Percidae
SGER	Sauger (SGER)	1 Stizostedion canadense	Percidae
SGWE	Sauger x walleye hybrid (SGWE)	1 S. canadense x S. vitreum	Percidae
SHDR	Slenderhead darter (SHDR)	1 Percina phoxocephala	Percidae
SHRH	Shorthead redhorse (SHRH)	1 Moxostoma macrolepidotum	Catostomidae
SHTM	Starhead topminnow (SHTM)	1 Fundulus dispar	Cyprinodontidae

SJHR	Skipjack herring (SJHR)	1 <i>Alosa chrysochloris</i>	Clupeidae
SJMW	Silverjaw minnow (SJMW)	1 <i>Notropis buccatus</i>	Cyprinidae
SKCB	Speckled chub (SKCB)	1 <i>Macrhybopsis aestivalis</i>	Cyprinidae
SLDR	Slough darter (SLDR)	1 <i>Etheostoma gracile</i>	Percidae
SMBF	Smallmouth buffalo (SMBF)	1 <i>Ictiobus bubalus</i>	Catostomidae
SMBS	Smallmouth bass (SMBS)	1 <i>Micropterus dolomieu</i>	Centrarchidae
SMMW	Suckermouth minnow (SMMW)	1 <i>Phenacobius mirabilis</i>	Cyprinidae
SNGR	Shortnose gar (SNGR)	1 <i>Lepisosteus platostomus</i>	Lepisosteidae
SNPD	Shovelnose pallid sturgeon (SNPD)	1 <i>Scaphirhynchus albus x plat</i>	Acipenseridae
SNSG	Shovelnose sturgeon (SNSG)	1 <i>Scaphirhynchus platyrhynchus</i>	Acipenseridae
SNSN	Sand shiner (SNSN)	1 <i>Notropis stramineus</i>	Cyprinidae
SPDR	Spottail darter (SPDR)	1 <i>Etheostoma squamiceps</i>	Percidae
SPMT	Striped mullet (SPMT)	1 <i>Mugil cephalus</i>	Mugilidae
SPSK	Spotted sucker (SPSK)	1 <i>Minytrema melanops</i>	Catostomidae
SPSN	Striped shiner (SPSN)	1 <i>Luxilus chrysocephalus</i>	Cyprinidae
SRBD	Southern redbelly dace (SRBD)	1 <i>Phoxinus erythrogaster</i>	Cyprinidae
STBS	Spotted bass (STBS)	1 <i>Micropterus punctulatus</i>	Centrarchidae
STCT	Stonecat (STCT)	1 <i>Noturus flavus</i>	Ictaluridae
STDR	Stripetail darter (STDR)	1 <i>Etheostoma kennicotti</i>	Percidae
STGR	Spotted gar (STGR)	1 <i>Lepisosteus oculatus</i>	Lepisosteidae
STSF	Spotted sunfish (STSF)	1 <i>Lepomis punctatus</i>	Centrarchidae
STSN	Spottail shiner (STSN)	1 <i>Notropis hudsonius</i>	Cyprinidae
SVCB	Silver chub (SVCB)	1 <i>Macrhybopsis storeriana</i>	Cyprinidae
SVCP	Silver carp (SVCP)	1 <i>Hypophthalmichthys molitrix</i>	Cyprinidae
SVLP	Silver lamprey (SVLP)	1 <i>Ichthyomyzon unicuspis</i>	Petromyzontidae
SVMW	Mississippi silvery minnow (SVMW)	1 <i>Hybognathus nuchalis</i>	Cyprinidae
SVRH	Silver redbhorse (SVRH)	1 <i>Moxostoma anisurum</i>	Catostomidae
SWBS	Shadow bass (SWBS)	1 <i>Ambloplites ariommus</i>	Centrarchidae
SYSP	Slimy sculpin (SYSP)	1 <i>Cottus cognatus</i>	Cottidae
TFSD	Threadfin shad (TFSD)	1 <i>Dorosoma petenense</i>	Clupeidae
TPMT	Tadpole madtom (TPMT)	1 <i>Noturus gyrinus</i>	Ictaluridae
TTPH	Trout perch (TTPH)	1 <i>Percopsis omiscomaycus</i>	Percopsidae
U-AT	Unidentified Atherinidae (silverside) (U-AT)	1 <i>Atherinoides</i> sp.	Atherinidae
U-CD	Unidentified Cyprinodontidae (topminnows) (U-CD)	1 <i>Fundulus</i> sp.	Cyprinodontidae
U-CL	Unidentified Clupeidae (herring) (U-CL)	1 <i>Clupeidae</i> sp.	Clupeidae
U-CN	Unidentified Centrarchidae (sunfish) (U-CN)	1 <i>Centrarchidae</i> sp.	Centrarchidae
U-CT	Unidentified Catostomidae (sucker) (U-CT)	1 <i>Catostomidae</i> sp.	Catostomidae
U-CY	Unidentified Cyprinidae (minnow) (U-CY)	1 <i>Cyprinidae</i> sp.	Cyprinidae
U-ES	Unidentified Esocidae (pikes) (U-ES)	1 <i>Esox</i> sp.	Esocidae
U-HI	Unidentified Hiodontidae (moon/goldeye) (U-HI)	1 <i>Hiodon</i> sp.	Hiodontidae
U-IL	Unidentified Ictaluridae (catfish) (U-IL)	1 <i>Ictalurus</i> sp.	Ictaluridae
U-LS	Unidentified Lepisosteidae (gar) (U-LS)	1 <i>Lepisosteus</i> sp.	Lepisosteidae
U-LY	Unidentified Petromyzontidae (lamprey) (U-LY)	1 <i>Petromyzontidae</i> sp.	Petromyzontidae
U-MO	Unidentified Percichthyidae (temperate bass) (U-MO)	1 <i>Morone</i> sp.	Percichthyidae
UNID	Unidentified (UNID)	1 Unidentified	Unidentified
U-PC	Unidentified Percidae (perch) (U-PC)	1 <i>Percidae</i> sp.	Percidae
U-SG	Unidentified Acipenseridae (sturgeon) (U-SG)	1 <i>Scaphirhynchus</i> sp.	Acipenseridae

WDSN	Weed shiner (WDSN)	1 Notropis texanus	Cyprinidae
WLYE	Walleye (WLYE)	1 Stizostedion vitreum	Percidae
WPYB	White perch x Yellow bass hybrid (WPYB)	1 Morone americana x mississippiensis	Percichthyidae
WRMH	Warmouth (WRMH)	1 Lepomis gulosus	Centrarchidae
WSDR	Western sand darter (WSDR)	1 Ammocrypta clara	Percidae
WSMW	Western silvery minnow (WSMW)	1 Hybognathus argyritis	Cyprinidae
WTBS	White bass (WTBS)	1 Morone chrysops	Percichthyidae
WTCF	White catfish (WTCF)	1 Ameiurus catus	Ictaluridae
WTCP	White crappie (WTCP)	1 Pomoxis annularis	Centrarchidae
WTPH	White perch (WTPH)	1 Morone americana	Percichthyidae
WTSK	White sucker (WTSK)	1 Catostomus commersoni	Catostomidae
YLBH	Yellow bullhead (YLBH)	1 Ameiurus natalis	Ictaluridae
YOYF	Age-0 fish (YOYF)	1 Unidentified YOY	Unidentified YOY
YWBS	Yellow bass (YWBS)	1 Morone mississippiensis	Percichthyidae
YWPH	Yellow perch (YWPH)	1 Perca flavescens	Percidae