TECHNICAL MEMORANDUM:
FISH COMPOSITING STRATEGY FOR EVALUATING RISK TO HUMAN HEALTH
ARMSTRONG WORLD INDUSTRIES SUPERFUND SITE, OPERABLE UNIT 2

Date: June 15, 2020

To: Mr. Brian Farrier (U.S. EPA Region IV, Superfund Remedial Section C)

From: Kirk Kessler, P.G. and Joseph Nicolette (EPS, Inc.)

OVERVIEW

As part of the Remedial Investigation/Feasibility Study (RI/FS) for Operable Unit 2 (OU2) of the Armstrong World Industries Superfund Site (the "Site"), Environmental Planning Specialists, Inc. (EPS) collected fish from Rocky Creek and Tobesofkee Creek to test chemical residue concentrations in the edible tissue for evaluation of human fish consumption. Fishing was performed at seven distinct portions of the waterway and more than 350 fish specimens were caught and processed. The purpose of this memorandum is to propose the fish compositing strategy for the laboratory testing, as it is a deviation from the originally proposed methodology presented in the RI/FS Work Plan (Section 8.1.6) (EPS, 2019a).

STUDY AREA

EPS collected fish from six distinct zones (reaches) within Rocky Creek (three upstream of the Site and three adjacent to the Site) and one zone within Tobesofskee Creek downstream of the Site (in Bond Swamp National Wildlife Refuge, herein referred to as the "Wildlife Refuge"), as shown on Figure 1. The sampling design was adapted from the historical fish collection locations conducted by the United States Army Corps of Engineers (USACE) (USACE, 2000). Fish collection zones are generally co-located with sediment incremental sampling methodology (ISM) Decision Units (DUs), though were often extended up- and/or down-stream of the ISM DU and along adjoining anabranches to encompass productive fishing areas (habitats).

Rocky Creek is readily accessible to recreational fishermen in Zones 1 and 4 (see Figure 1). Zone 1 is accessed near Interstate-75 from a small shopping center at the intersection of Rocky Creek Road and Pio Nono Avenue (1415-1425 Rocky Creek Road), and Zone 4 is accessed along the western trestle of the Central Georgia Railroad from Allied Industrial Park (AIP). The remaining collection zones in Rocky Creek are bordered by dense forested wetland with numerous deadfall log-jams throughout and are not readily accessible to the public.

Tobesofkee Creek is readily accessible to recreational fishermen at the Wildlife Refuge where it is open to the public for sport fishing from March 1 through October 31; the United States Fish and Wildlife Service (USFWS) has established a public fishing point located near the downstream boundary of Zone 7 (Figure 1). Zone 7 also borders several private properties with direct access to Tobesofkee Creek. Aside from these areas, Zone 7 is otherwise bordered by dense forested wetland similar to Rocky Creek and these areas are not readily accessible to the public.

EPS observed recreational fishermen in Zone 1 and Zone 4 of Rocky Creek during the survey. EPS did not observe fishermen in Tobesofkee Creek (Zone 7) on account of the Wildlife Refuge being closed due to construction (EPS obtained special permission to access the area while the Wildlife Refuge was closed).

STUDY AREA SETTING

Rocky Creek and Tobesofkee Creek are anastomosed channels (separated by islands cut from the floodplain) bordered upstream by Lake Tobesofkee and Lake Wildwood, inland by forested wetlands (such as the Site) and upland areas, and downstream by the Ocmulgee River. Both creeks are characterized by nontidal flowing water throughout the year; low gradient and low flow velocity; relatively warm water temperatures (approximately 20 ºC during the survey) with seasonal fluctuations in dissolved oxygen concentration; and a substrate of sand and clay. Channel morphology (*i.e*., pattern and geometry) varies throughout the study area, transitioning to/from a series of shallow and narrow braids (prevailing in the lower portion of Zone 1, in Zones 2-3, and the upper portion of Zone 7) to a wider and deeper single-channel (prevailing in the upper portion of Zone 1, in Zones 4-6, and the lower portion of 7).

Rocky Creek and Tobesofkee Creek exhibit a well-developed floodplain that plays a critical role in the riverine ecosystem. Over-the-bank flooding and bank erosion topple floodplain trees (either directly, or indirectly lead to windthrow from increased soil saturation) and exhume woody debris in floodplain sediment, which are carried (transported) to the creek channels as the water level fluctuates between low and high stages. Large woody debris accumulations (obstructions) provide resistance to water flow (Curran and Wohl, 2003) and increase sediment and organic matter deposition; enhance hyporheic exchange at the sediment-water interface (Sawyer *et al.*, 2011); provide an abundance and diversity of habitat for aquatic organisms (Johnson *et al.*, 2003); and influence channel morphology, including formation of anabranches (Collins *et al.*, 2012), spacing and dimensions of bedforms (Curran and Wohl, 2003; MacFarlane and Wohl, 2003), and channel-floodplain connectivity (Jeffries *et al.*, 2003). Furthermore, the floodplain may be exploited by various riverine fish species for terrestrial food resources (Reimer, 1991; Moses, 1987); for spawning and rearing juveniles (Guillory, 1979); and/or as refuge from the main channel current (Holčík and Bastl, 1976).

COLLECTION OBJECTIVES

The collection goal, as stated in the RI/FS Work Plan (EPS, 2019a), was to obtain 15 individual fish of each of five target (primary) species, for each of the seven zones. Fish of a given species and zone were then to be divided into three composite sample groups for testing based upon size class. The collection goal stems from the State of Georgia Department of Natural Resources (GDNR) fish sampling protocols developed for establishing fish consumption guidelines. The Work Plan also stipulated several surrogate (secondary) species for consumable target species and although not stated as such, involved the same collection goal as the primary species. The primary and secondary species are listed in Table 1.

Table 1. Target (primary) and surrogate (secondary) fish species.

Primary Target Species	Surrogate (Secondary) Species
Large-Mouth Bass (*Micropterus Salmoides*)	Redfin and Chain Pickerel (*Esox Americanus* and *Esox Niger*)
Channel Catfish (*Ictalurus Punctatus*)	Brown and Yellow Bullhead (*Ameriurus Nebulosus* and *Ameiurus Natalis*)
Bluegill (*Lepomis Macrochirus*)	Redbreast Sunfish (*Lepomis Auritus*)
Black and White Crappie (*Promoxis Nigromaculatus*, *Promoxis Annularis*)	
Spotted Sucker (*Minytrema Melanops*)	

The abundance of fish collected varied across the zones largely due to varying habitat. Of the three upstream zones, Zone 1 was by far the most productive area owing to generally deeper water with a more defined channel. Of the three site adjacent zones, Zone 4 was by far the most productive, also characterized by a more defined and deeper channel compared to Zones 5 and 6.

SUMMARY OF RI/FS FISH COLLECTION AND EVALUATION OF FISHING SUCCESS

Fish collection in Rocky Creek was conducted by EPS in two separate mobilizations (one in December 2019 and another in May 2020) totaling nearly 1,000 hours of collection effort over a period of 20 days. The EPS team included experienced fishermen knowledgeable of the various fish species documented in Rocky Creek and Tobesofkee Creek. All activity was performed under two permits issued to EPS: a Georgia Scientific Collection Permit (Permit No. 11907969) issued by GDNR, and Special Use Permit (Permit No. G020-015) issued by USFWS for Zone 7.

Fish were collected using an array of gear including gill nets of various mesh sizes, hook-and-line gear, traps, and a backpack electrofishing unit.[1] Upon collection, all specimens were placed into location-specific coolers with ice (to maintain sample integrity) and directed to a dry-land facility for processing.[2] Processing consisted of physical evaluations (*i.e.*, length and weight measurements), biological determinations, and preparation of samples (filets) for chemical analyses. After processing, the specimens were bagged, cataloged and the samples were labeled and are being maintained in a freezer chest until the compositing strategy is determined.

EPS collected and processed a total of 357 individual specimens representing 17 fish species, including each of the five primary target species and three of the surrogate species (chain pickerel,

[1] The methodology associated with each of these equipment types is detailed in the Field Sampling Plan (EPS, 2019b).

[2] Processing was performed approximately once every two days. Sample cooler ice was refreshed nightly to maintain sample integrity until fish were processed.

yellow bullhead, and redbreast sunfish). Additional species included warmouth (*Lepomis gulosus*), longnose and spotted gar (*Lepisosteus osseus* and *Lepisosteus oculatus*, respectively), striped bass (*Morone saxatilis*), redear sunfish (*Lepomis microlophus*), spotted sunfish (*Lepomis punctatus*), green sunfish (*Lepomis cyanellus*), bowfin (*Amia calva*), and Alabama bass (*Micropterus henshalli*). A summary of the fish collection results is provided in Table 2 and a photographic log depicting the various species is included as Attachment A.

Table 2. Fish collection summary.

Species		Zone #1	Zone #2	Zone #3	Zone #4	Zone #5	Zone #6	Zone #7	Totals
Primary	Largemouth Bass	10	0	0	11	0	0	7	28
	Bluegill	13	0	0	6	0	0	14	33
	Channel Catfish	0	0	0	0	0	0	1	1
	Black and White Crappie	0	0	0	2	0	0	1	3
	Spotted Sucker	27	0	0	18	1	0	6	52
Secondary	Redfin Pickerel	0	0	0	0	0	0	0	0
	Chain Pickerel	8	1	0	26	0	0	5	40
	Brown/Yellow Bullhead	0	1	3	5	0	0	1	10
	Redbreast Sunfish	20	0	0	12	12	0	9	53
Additional	Warmouth	16	1	0	18	1	0	3	39
	Bowfin	3	0	0	7	0	0	4	14
	Striped Bass	0	0	0	6	0	0	13	19
	Longnose/Spotted Gar	7	0	0	15	3	6	15	46
	Spotted Sunfish	2	1	0	1	4	0	3	11
	Green Sunfish	1	0	0	2	1	0	0	4
	Redear Sunfish	1	0	0	1	0	0	1	3
	Alabama Bass	0	0	0	1	0	0	0	1
Totals		108	4	3	131	22	6	83	**357**

After considerable collection effort, the low abundance of target fish in each zone led to less than planned number of fish, with exception of spotted sucker in Zones 1 and 4. As stated in the Work Plan, the collection objective is idealistic and not typically obtainable in practice. For perspective, the historical fish survey yielded 55 specimens (individuals) representing 10 fish species (USACE,

2000).[3] A compositing strategy for evaluating potential risk to human health by consumption of edible fish tissue is discussed below.

COMPOSITING STRATEGY FOR EVALUATING POTENTIAL RISK TO HUMAN HEALTH

Bioaccumulation is defined as uptake, storage, and accumulation of contaminants by organisms from their environment. Bioaccumulation therefore results from a dynamic equilibrium between exposure from the outside environment, route of uptake (*e.g.*, via prey items, suspended particles and sediments, and/or water), excretion, passive release, and metabolization (Streit, 1998). The extent of bioaccumulation depends on the nature of the chemical (*e.g.*, water and fat solubility); the magnitude, duration, and frequency of exposure; and animal physiology (*i.e.*, ability to store, degrade, and excrete the chemical). Therefore, the compositing strategy must consider the magnitude and geographic scale of the chemical condition in the creek channels related to the Site, home range of the targeted species, and animal feeding behavior and physiology.

Evolutionary processes have preserved behavioral patterns and morphologic (physical) and physiologic adaptations that optimize evolutionary fitness (*i.e.*, survival and reproductive success) by enabling organisms to efficiently exploit resources (*e.g.*, food) and define suitable habitats (Little and Brewer, 2001). Thus, fish with comparable feeding behaviors (or affinity for certain food items) and habitat preference are more likely to share genetic attributes (*i.e.*, physical and physiologic traits) and, therefore, expected to exhibit a similar propensity to bioaccumulate chemicals. Furthermore, fish with shared feeding behavior and habitat preference are expected to experience similar exposure.

Accordingly, EPS proposes the following fish compositing strategy for use in the human health risk assessment:

- Consolidating the seven collection zones into three "reporting zones" based on their position relative to the Site and, therefore, degree to which they may be influenced by the Site condition: an upstream (or reference) zone (Zones 1-3), a zone abutting the Site (Zones 4-6), and a downstream zone (Zone 7);
- Establishing composite samples of fish with like feeding and habitat behaviors, such as the "bream" species (*i.e.*, bluegill, redbreast sunfish, warmouth, spotted sunfish, redear sunfish, and green sunfish);[4] and
- Establishing "same-species" composite samples (*i.e.*, composite samples comprised entirely of one species) where an abundance of specimen are available (*e.g.*, spotted sucker

[3] The creek chubsucker (*Erimyzon oblongus*) was the sole species unique to the historical survey.

[4] The bream species share a common diet of insects, crayfish, small invertebrates, and small fishes (occupying the same trophic level), and hybridize frequently due to overlapping spawning and habitat behavior. Therefore, bream species are likely to bioaccumulate chemicals in a similar manner.

and chain pickerel), and test individuals[5] where a limited number of particular fish species/zone are available (*e.g.*, channel catfish, bullhead, crappie).

Fish composites and individuals designated for testing from the upstream, Site, and downstream reporting zones are summarized in Table 3 and detailed in Attachment B. Fish composites are formulated in a proportional manner based on the abundance of the specimen in each reporting zone and adhere to the "75 percent rule" to reduce size-related variability.[6] In general, the number of individuals per composite is equal for each species/reporting zone. In the reporting zone abutting the Site, an additional constraint is applied to the composite formulation with respect to the bream species wherein specimens collected from Zone 4 and Zone 5 are distinctly grouped, due to an abundance of specimen available from these zones.

Table 3. Summary of fish compositing for analytical testing.

Reporting Zone	Collection Zones	Combined Species	Composites Count	Fish Count	Hierarchical Groupings
Upstream	1	Bass	4	10	Primary
	1, 2	Bream	5	51	Primary, Secondary, Other
	2, 3	Catfish/Bullhead	2	4	Secondary
	N/A	Crappie	0	0	Primary
	1	Gar	2	7	Other
	1, 2	Pickerel	3	9	Secondary
	1	Sucker	5	26	Primary
		Subtotal	21	107	
Site Adjacent	4	Bass	4	12	Primary
	4	Bream	5	39	Primary, Secondary, Other
	5	Bream	5	18	Primary, Secondary, Other
	4	Catfish/Bullhead	3	5	Secondary
	4	Crappie	2	2	Primary
	4, 5, 6	Gar	5	24	Other
	4	Pickerel	5	26	Secondary
	4, 5	Sucker	5	19	Primary
		Subtotal	34	145	
Downstream	7	Bass	3	7	Primary
	7	Bream	5	30	Primary, Secondary, Other
	7	Catfish/Bullhead	2	2	Primary, Secondary
	7	Crappie	1	1	Primary
	7	Gar	3	15	Other
	7	Pickerel	3	5	Secondary
	7	Sucker	3	6	Primary
		Subtotal	20	66	
Grand Total			**75**	**318**	

The consolidated reporting zones more accurately represent the home range of several of the more mobile target species (*e.g.*, largemouth bass, bullhead, and gar) (Table 4) and retain the ability to ascertain the influence from the Site condition.

[5] Where the fish count is low, testing of individual specimens is proposed over a single composite sample as in this manner, the testing will identify variability.

[6] Size is considered as a surrogate for age, which provides some estimate of the total time the individual organism has been at risk of exposure. Additionally, body size places constraints on uptake, excretion processes, metabolic rates, and most other physiological processes (Townsend and Calow, 1981).

Table 4. Home range and habitat characteristics of primary and secondary species.

	Species	Linear Home Range (mi)	Study Area Habitat	Sources
Primary	Largemouth Bass	0.08 - 4	River	Gatz and Adams, 1994; Gent *et al.*, 1995; Karchesky and Bennett, 2004
	Bluegill	0.03 - 0.31	River	Gatz and Adams, 1994; Gunning and Shoop, 1963
	Channel Catfish	1.3 - 52.9	River	Wendel and Kelsch, 1999; Davis et al., 2010; Duran *et al.*, 2011; Pellet *et al.*, 1998
	Black and White Crappie	0.04 - 0.08 mi^2	Lake	Guy et al., 1994; Markham *et al.*, 2001
	Spotted Sucker[1]	0.07 - 0.12	River	Gerking, 1953
Secondary	Redfin/Chain Pickerel[2]	0.1 - 5	River	Donnelly *et al.*, 1998; Hohausova, 2000
	Brown/Yellow Bullhead	1.3- 3.2	River	Sakaris *et al.*, 2005; Whitehurst, 1981
	Redbreast Sunfish	0.01 - 0.15	River	Freeman, 1995; Gatz and Adams, 1994; Skalski and Gilliam, 2000
Additional	Warmouth	0.08	River	Gatz and Adams, 1994
	Green Sunfish	0.03 - 0.28	River	Gerking, 1953; Smith and Johnston, 1999
	Striped Bass	24	River	Bjorgo *et al.*, 2000
	Longnose/Spotted Gar[3]	1.7 - 7.6	River/Delta	Sakaris *et al.*, 2003
	Notes:			
	[1] Based off home range reported for Golden Redhorse (*Moxostoma erythrurum*).			
	[2] Based off home range reported for Northern Pike (*Esox lucius*). Northern Pike have been documented to naturally hybridize with			
	chain pickerel due to overlapping spawning and habitat preference (Herke et al., 1990).			
	[3] Based off home range reported for Alligator Gar (*Atractosteus spatula*).			

MIGRATORY AND UNPALATABLE SPECIES

Striped bass are not believed to be a year-round species in this waterway (owing to the warm temperatures and low oxygen levels in the summer and fall months); however, they are stocked in Lake Tobesofkee and are believed to have migrated from the lake to the creeks for spawning. Thus, we do not propose to submit the striped bass for testing as their chemical uptake is not representative of Site exposure.

Furthermore, bowfin is considered unpalatable and their flesh readily degrades immediately after caught (Oates *et al.*, 1993; Scott and Crossman, 1975). Given that characteristic and the low numbers of bowfin caught, EPS proposes not to submit these samples for testing.

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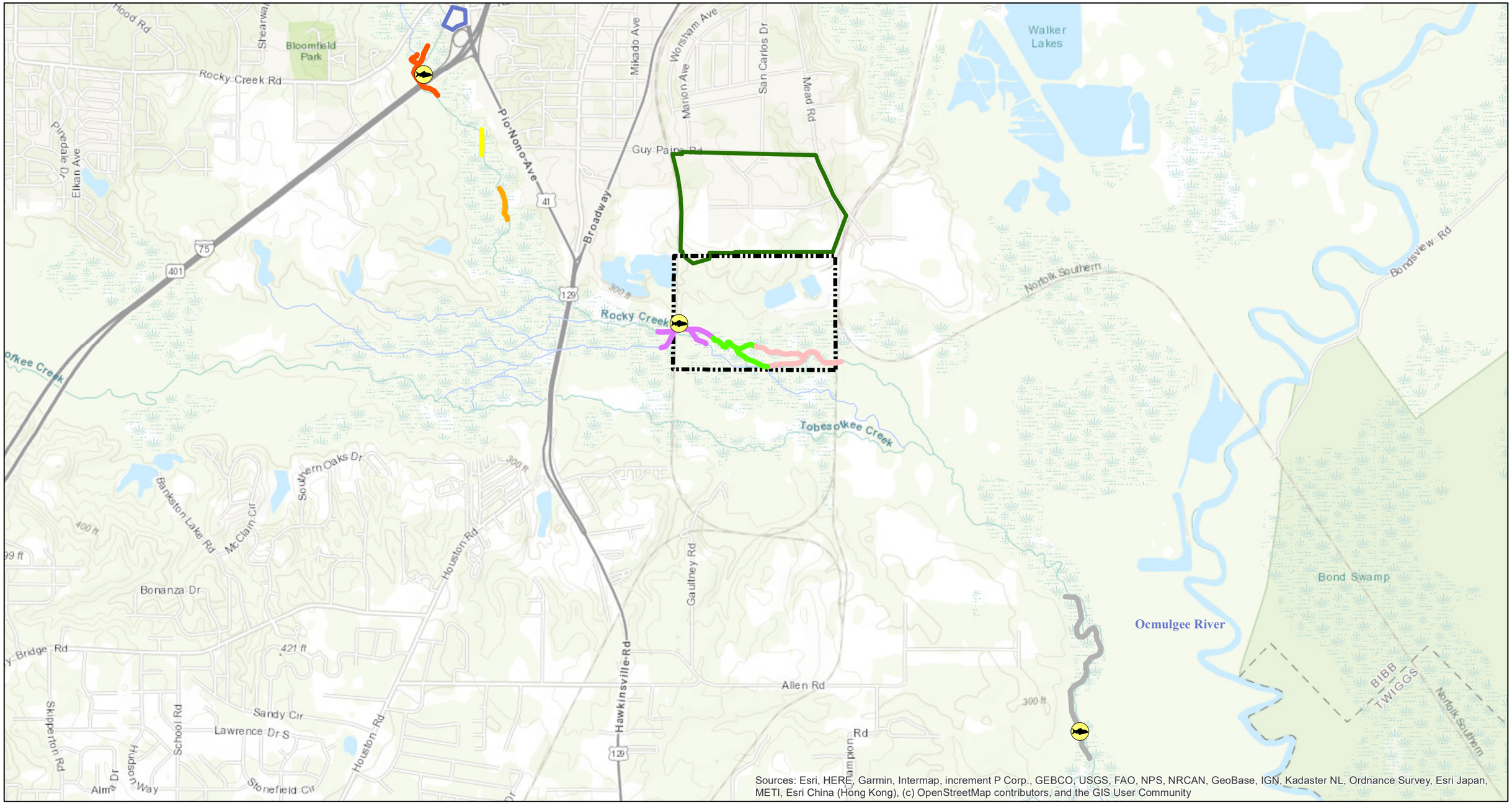
FIGURES



0 1,250 2,500 5,000
Feet

Legend

- Public Fishing Access
- OU2 (Site)
- AIP
- Shopping Center

Collection Zone

1, 2, 3, 4, 5, 6, 7

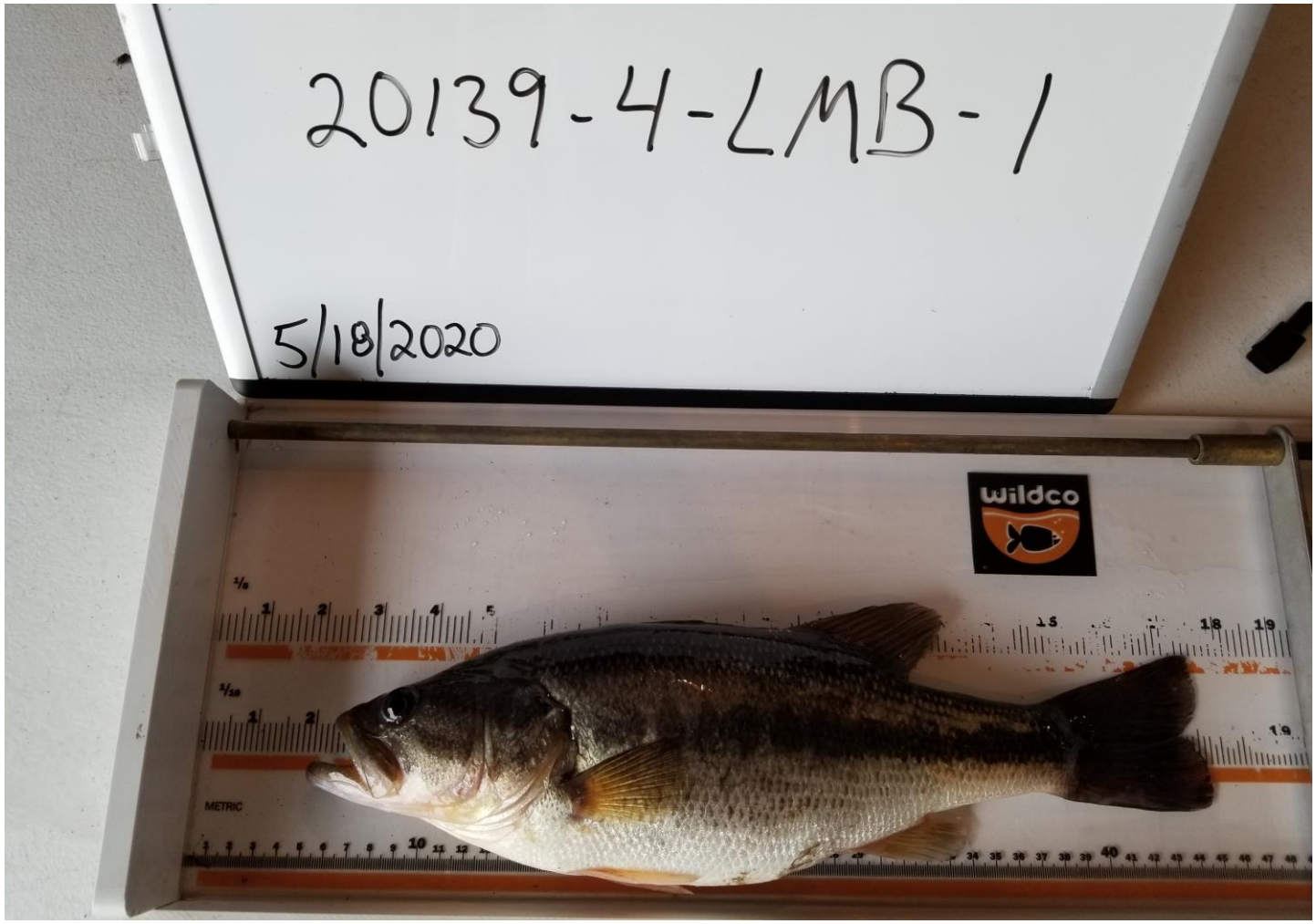
Fish Survey Study Area Collection Zones and Public Access Points

Armstrong World Industries OU2
Macon, GA

EPS

Figure No. 1

ATTACHMENT A
Photographic Log of Fish Species



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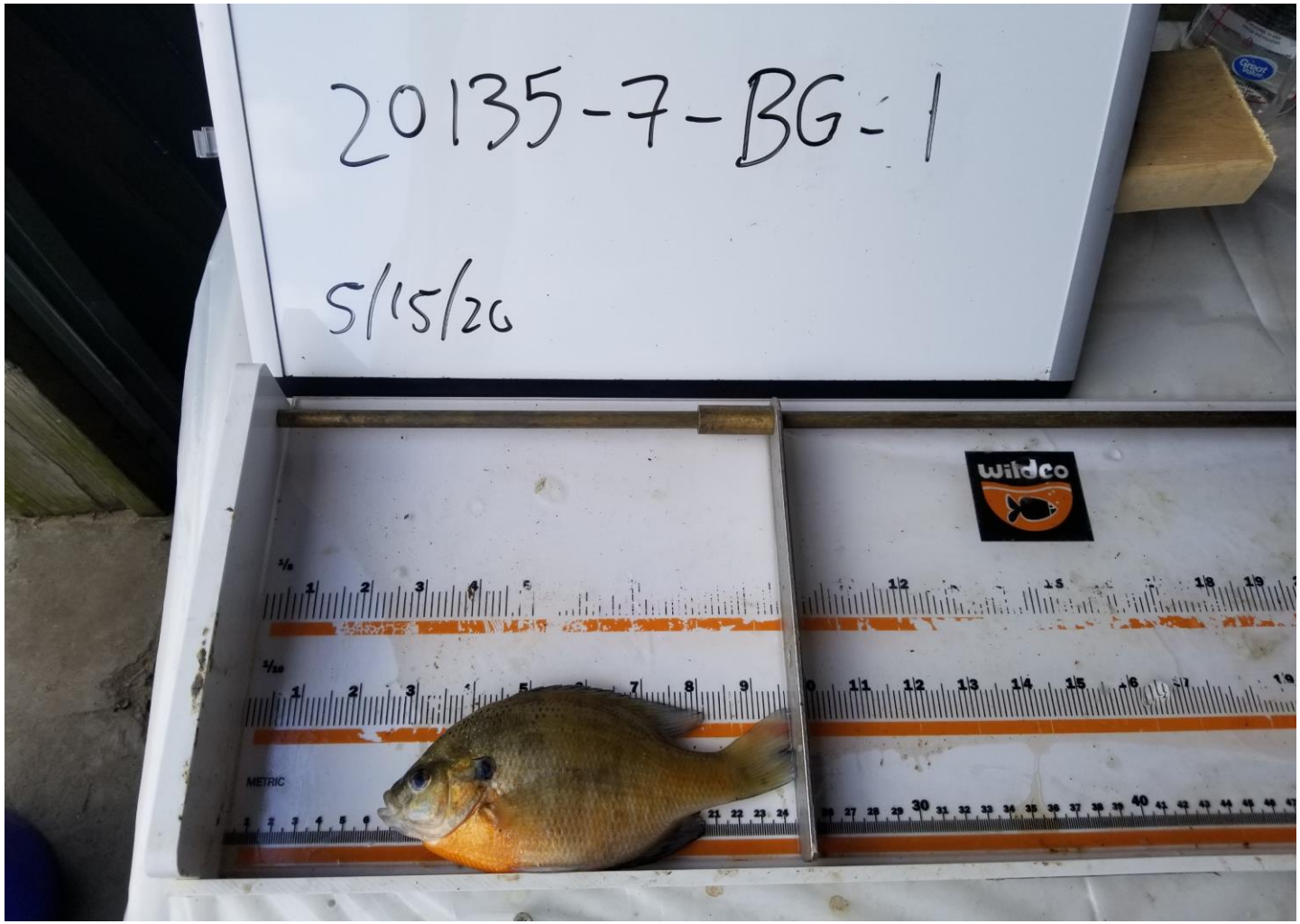

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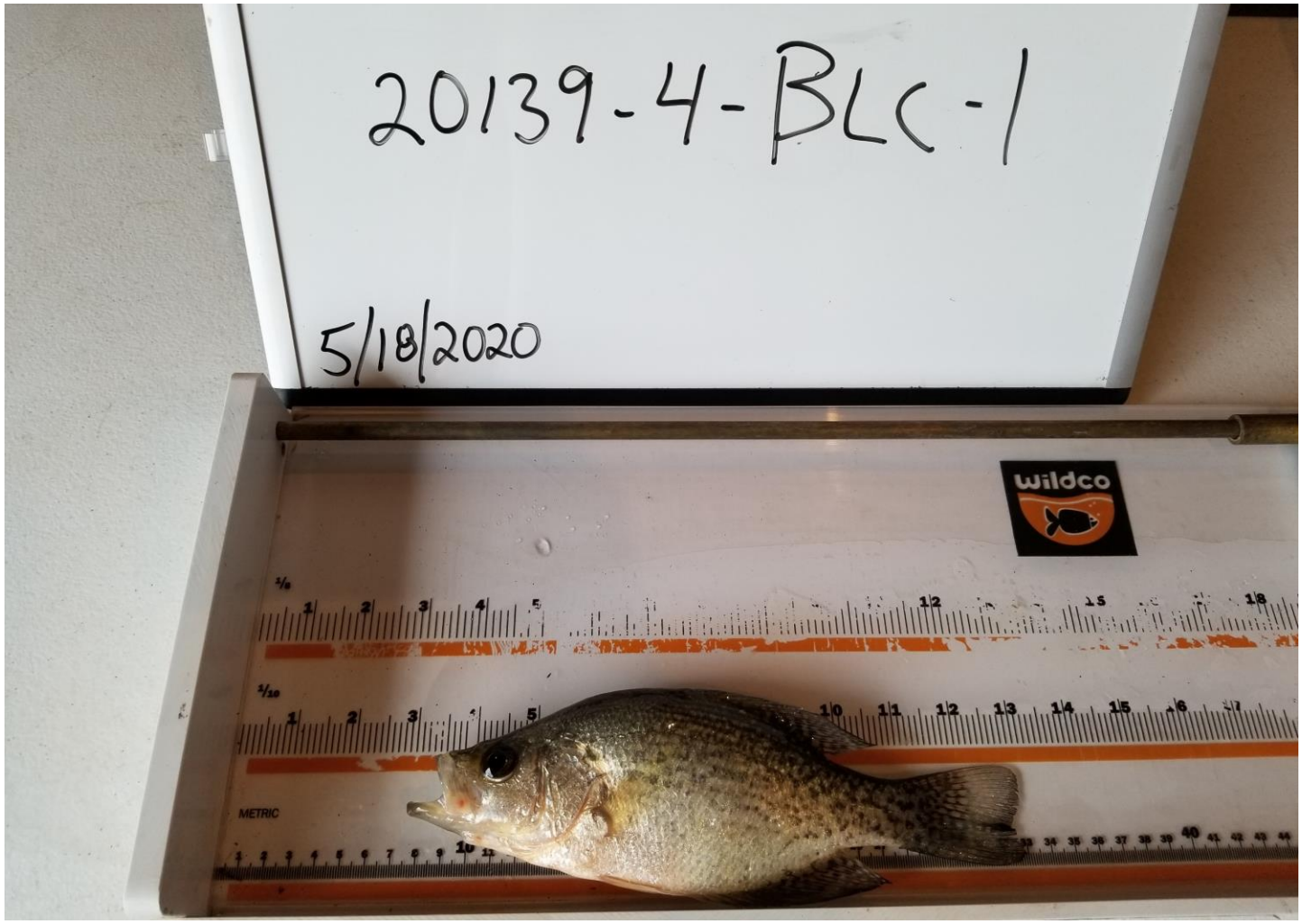
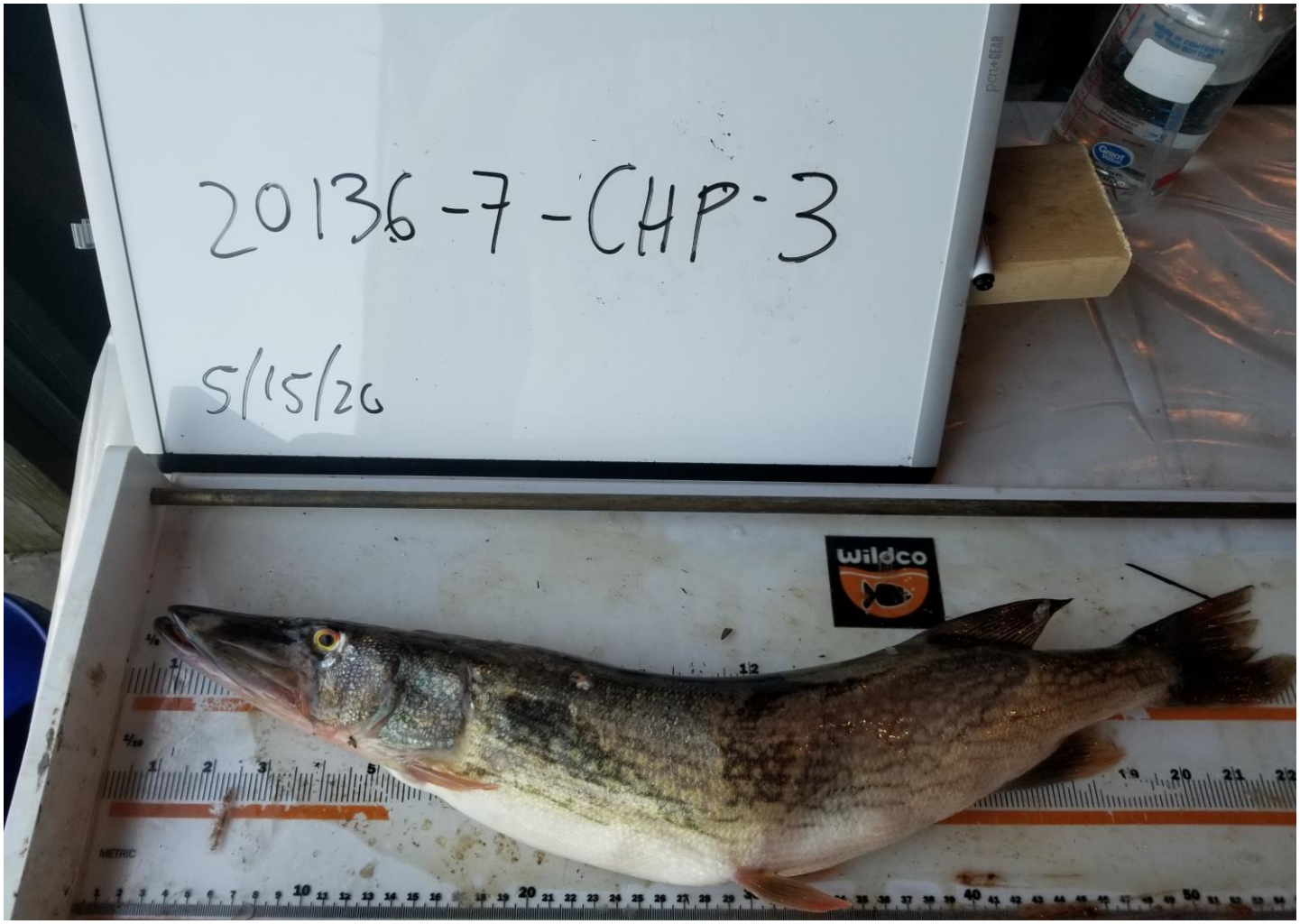


EPS a Montrose Environmental Group company	400 Northridge Rd Suite 400 Sandy Springs, GA 30350	AWI Macon OU2 Black Crappie - Zone 4	Page 3

EPS a Montrose Environmental Group company	400 Northridge Rd Suite 400 Sandy Springs, GA 30350	AWI Macon OU2 Spotted Sucker - Zone 1	Page 4



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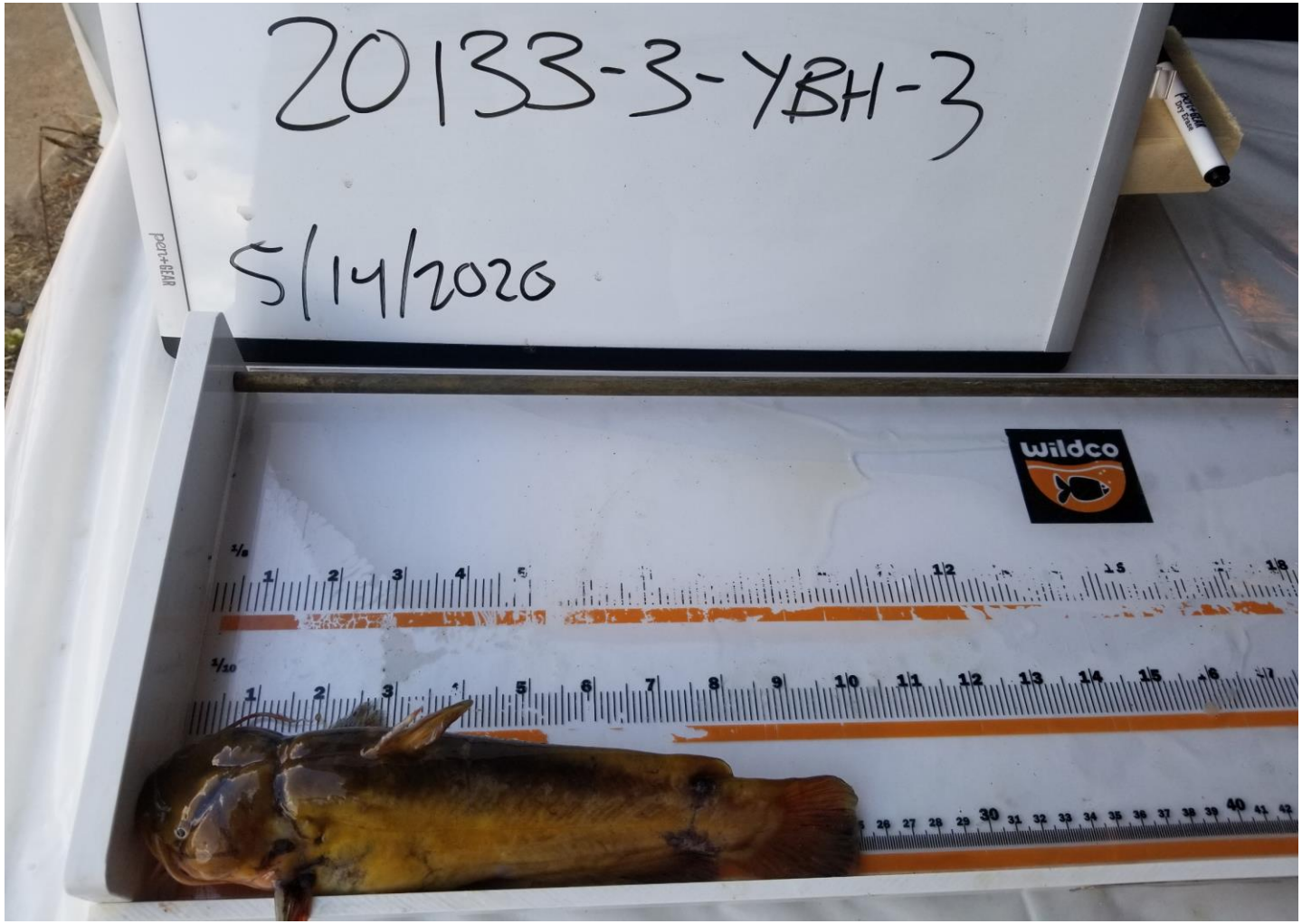
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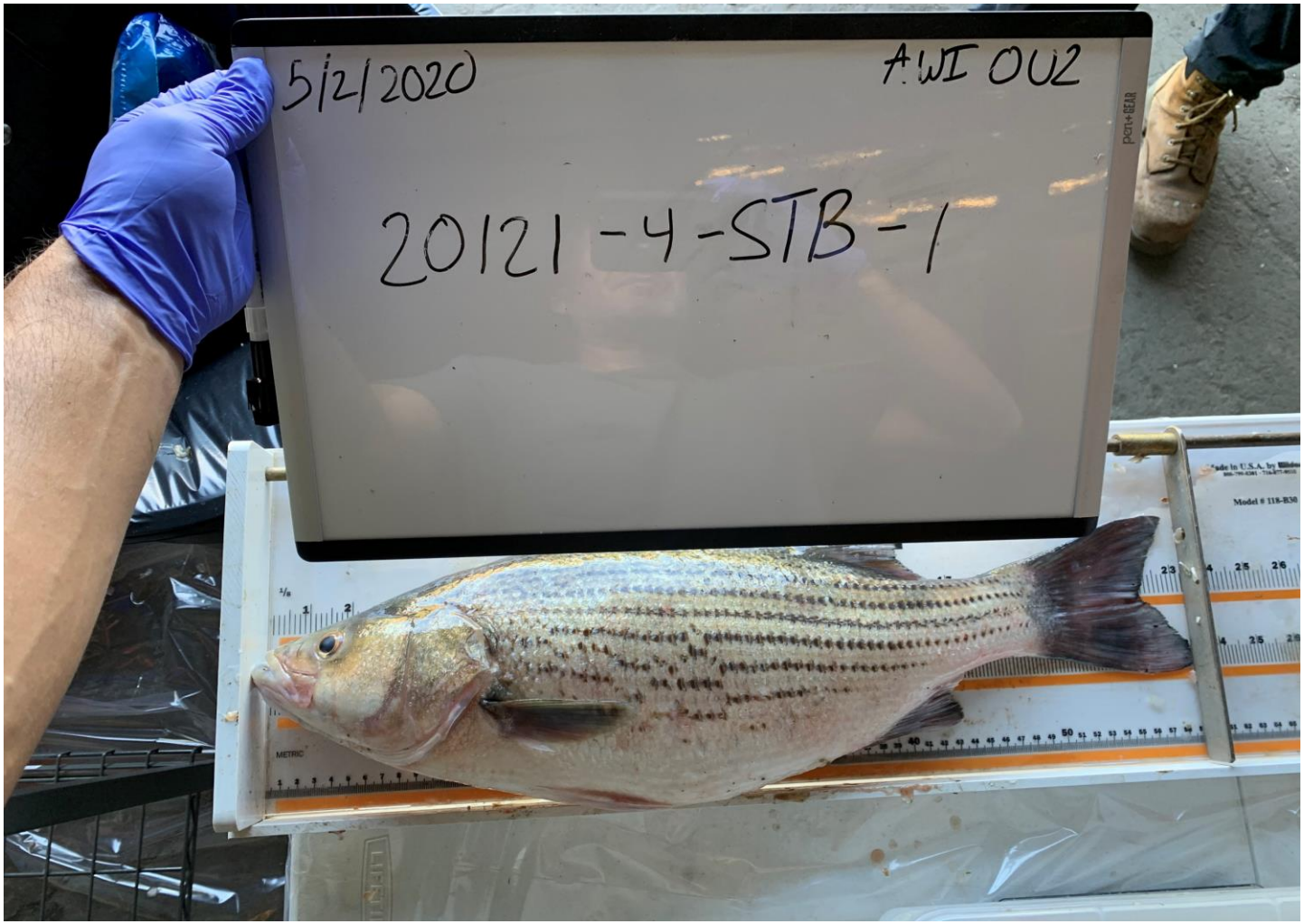
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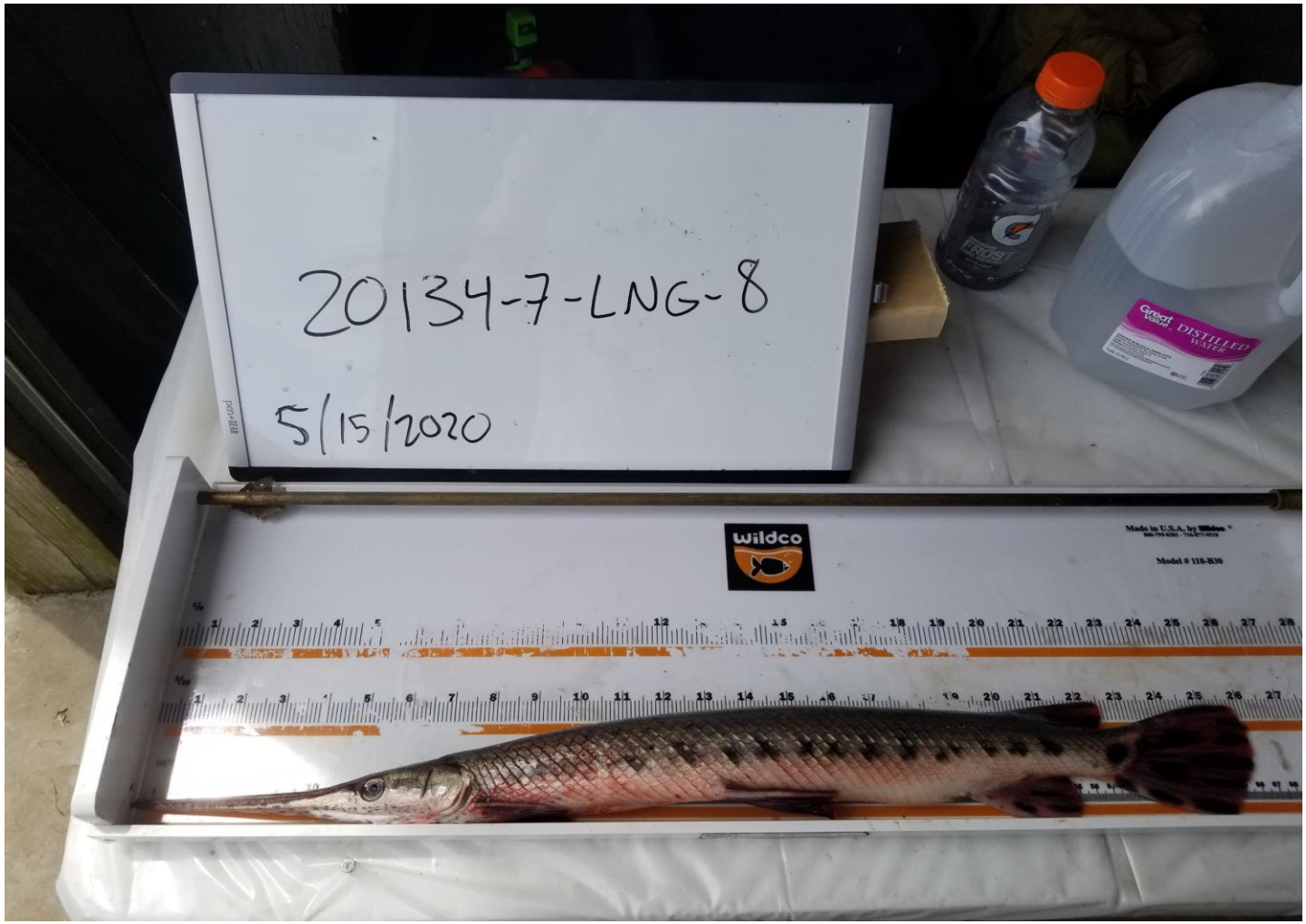
AWI OU2
20121-4-STB-1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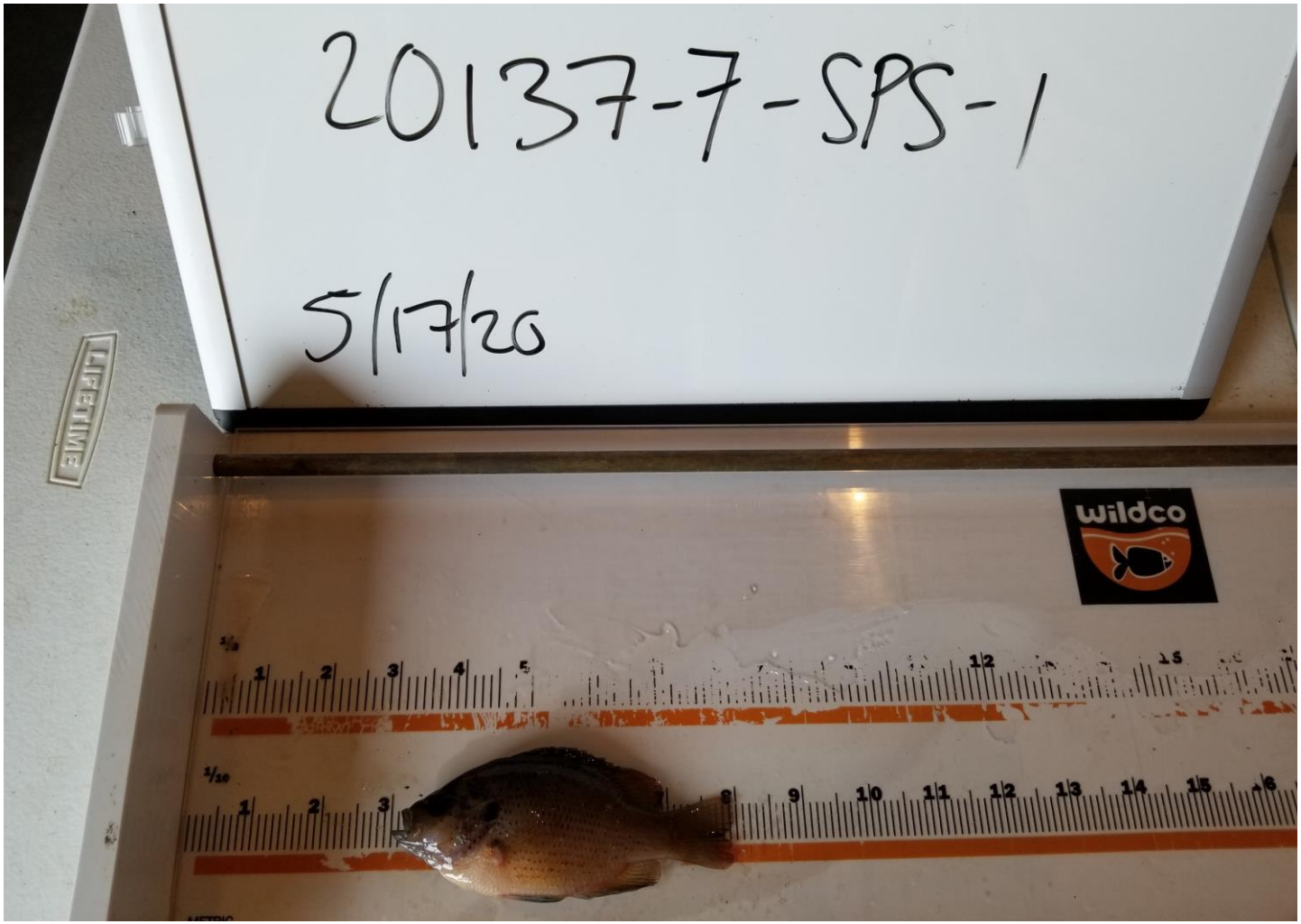
5/15/2020
wildco
Made in U.S.A. by
Model # 118-B30
Great Value DISTILLED WATER

5/6/2020
AWI OU2
20126-6-SG-2
wildco
METRIC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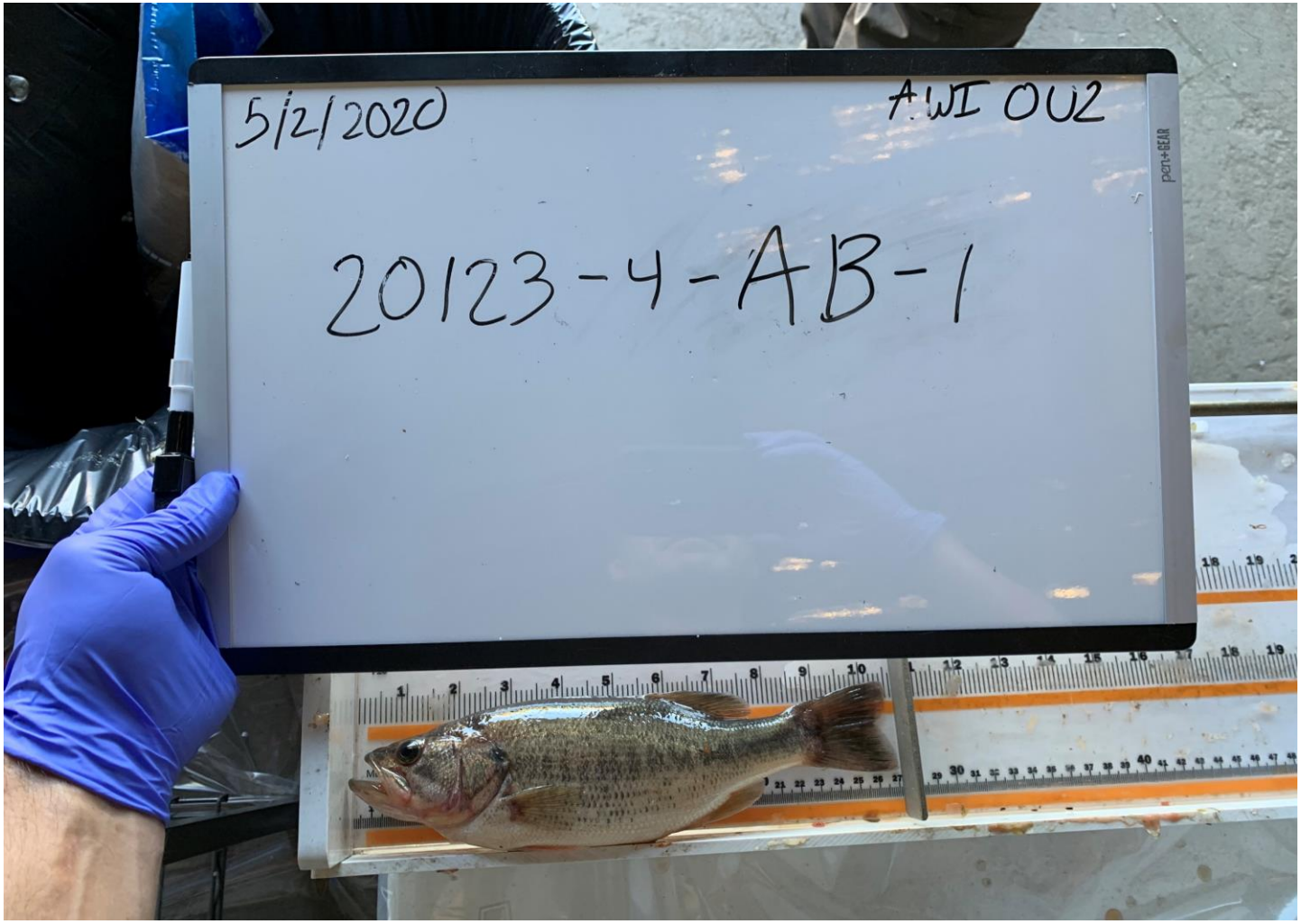
5/17/20
LIFETIME
Wildco

20139-4-GRN-2
5/18/2020
wildco

20139-4-RES-1
5/18/2020
Wildco


5/2/2020
AWI OU2
20123-4-AB-1

20133-7-CC-1
5/14/2020
wildco

ATTACHMENT B
Fish Compositing for Analytical Testing

Table B-1. Compositing Strategy for Upstream Reporting Zone

Individual Sample ID	Date	Zone	Composite #	Species	Combined Species	Total Length (mm)	Total Length (in)	Total Weight (g)	% Length
20134-1-LMB-1	5/13/2020	1	1	Largemouth Bass	bass	375	15	821	100%
20127-1-LMB-1	5/6/2020	1		Largemouth Bass	bass	374	15	789	
20135-1-LMB-1	5/14/2020	1	2	Largemouth Bass	bass	364	14	727	95%
20134-1-LMB-2	5/13/2020	1		Largemouth Bass	bass	353	14	741	
20127-1-LMB-2	5/6/2020	1		Largemouth Bass	bass	345	14	655	
20135-1-LMB-3	5/14/2020	1	3	Largemouth Bass	bass	311	12	448	95%
20135-1-LMB-2	5/14/2020	1		Largemouth Bass	bass	297	12	431	
20137-1-LMB-1	5/16/2020	1	4	Largemouth Bass	bass	284	11	320	94%
20126-1-LMB-2	5/5/2020	1		Largemouth Bass	bass	283	11	384	
20126-1-LMB-1	5/5/2020	1		Largemouth Bass	bass	266	10	241	
20135-1-WM-1	5/14/2020	1	1	Warmouth	bream	222	9	333	86%
20135-1-WM-2	5/14/2020	1		Warmouth	bream	221	9	324	
20134-1-RBS-1	5/13/2020	1		Redbreast sunfish	bream	213	8	188	
20135-1-RBS-2	5/14/2020	1		Redbreast Sunfish	bream	203	8	168	
20135-1-RBS-5	5/14/2020	1		Redbreast Sunfish	bream	201	8	183	
20135-1-WM-5	5/14/2020	1		Warmouth	bream	200	8	223	
20137-1-RBS-2	5/16/2020	1		Redbreast Sunfish	bream	196	8	152	
20135-1-WM-4	5/14/2020	1		Warmouth	bream	193	8	197	
20128-1-WM-1	5/7/2020	1		Warmouth	bream	191	8	154	
20135-1-WM-3	5/14/2020	1		Warmouth	bream	191	8	187	
20135-1-RBS-6	5/14/2020	1	2	Redbreast Sunfish	bream	190	7	138	96%
20137-1-RBS-1	5/16/2020	1		Redbreast Sunfish	bream	190	7	142	
20137-1-RBS-3	5/16/2020	1		Redbreast Sunfish	bream	190	7	163	
20133-2-SPS-1	5/12/2020	2		Spotted Sunfish	bream	189	7	154	
20135-1-RBS-1	5/14/2020	1		Redbreast Sunfish	bream	188	7	153	
20135-1-WM-6	5/14/2020	1		Warmouth	bream	188	7	181	
20137-1-RBS-6	5/16/2020	1		Redbreast Sunfish	bream	186	7	125	
20133-2-WM-1	5/12/2020	2		Warmouth	bream	183	7	152	
20127-1-RBS-1	5/6/2020	1		Redbreast sunfish	bream	182	7	98	
20135-1-RBS-7	5/14/2020	1		Redbreast Sunfish	bream	182	7	122	
20135-1-RBS-3	5/14/2020	1	3	Redbreast Sunfish	bream	181	7	132	92%
20137-1-RBS-5	5/16/2020	1		Redbreast Sunfish	bream	181	7	132	
20135-1-WM-7	5/14/2020	1		Warmouth	bream	181	7	147	
20134-1-RES-1	5/13/2020	1		Redear Sunfish	bream	177	7	124	
20135-1-RBS-4	5/14/2020	1		Redbreast Sunfish	bream	176	7	124	
20127-1-WM-1	5/6/2020	1		Warmouth	bream	176	7	130	
20137-1-RBS-4	5/16/2020	1		Redbreast Sunfish	bream	175	7	125	
20137-1-RBS-7	5/16/2020	1		Redbreast Sunfish	bream	174	7	117	
20135-1-WM-8	5/14/2020	1		Warmouth	bream	171	7	118	
20127-1-WM-2	5/6/2020	1		Warmouth	bream	166	7	91	
20137-1-WM-1	5/16/2020	1	4	Warmouth	bream	158	6	107	86%
20137-1-WM-2	5/16/2020	1		Warmouth	bream	148	6	77	
20137-1-BG-1	5/16/2020	1		Bluegill	bream	146	6	60	
20137-1-SPS-1	5/16/2020	1		Spotted Sunfish	bream	146	6	77	
20135-1-BG-1	5/14/2020	1		Bluegill	bream	145	6	68	
20135-1-RBS-8	5/14/2020	1		Redbreast Sunfish	bream	145	6	57	
20137-1-BG-2	5/16/2020	1		Bluegill	bream	140	6	53	
20135-1-RBS-9	5/14/2020	1		Redbreast Sunfish	bream	138	5	53	
20137-1-WM-3	5/16/2020	1		Warmouth	bream	138	5	57	
20137-1-BG-3	5/16/2020	1		Bluegill	bream	136	5	50	

Table B-1. Compositing Strategy for Upstream Reporting Zone

Individual Sample ID	Date	Zone	Composite #	Species	Combined Species	Total Length (mm)	Total Length (in)	Total Weight (g)	% Length
20135-1-RBS-10	5/14/2020	1	5	Redbreast Sunfish	bream	134	5	45	89%
20135-1-WM-9	5/14/2020	1		Warmouth	bream	134	5	54	
20135-1-BG-2	5/14/2020	1		Bluegill	bream	132	5	48	
20135-1-BG-5	5/14/2020	1		Bluegill	bream	132	5	47	
20135-1-BG-4	5/14/2020	1		Bluegill	bream	131	5	46	
20137-1-BG-4	5/16/2020	1		Bluegill	bream	131	5	41	
20135-1-BG-3	5/14/2020	1		Bluegill	bream	130	5	49	
20135-1-BG-6	5/14/2020	1		Bluegill	bream	128	5	37	
20137-1-BG-5	5/16/2020	1		Bluegill	bream	124	5	35	
20137-1-RBS-8	5/16/2020	1		Redbreast Sunfish	bream	121	5	37	
20137-1-WM-4	5/16/2020	1		Warmouth	bream	119	5	33	
20137-1-BG-6	5/16/2020	1	undersized and not needed	Bluegill	bream	110	4	25	
20137-1-BG-7	5/16/2020	1		Bluegill	bream	99	4	16	
20135-1-SPS-1	5/14/2020	1		Spotted Sunfish	bream	95	4	21	
20135-1-GRN-1	5/14/2020	1		Green Sunfish	bream	92	4	20	
20133-2-YBH-1	5/12/2020	2	1	Yellow Bullhead	catfish	252	10	249	100%
20133-3-YBH-2	5/12/2020	3		Yellow Bullhead	catfish	251	10	303	
20133-3-YBH-3	5/12/2020	3	2	Yellow Bullhead	catfish	249	10	277	99%
20133-3-YBH-1	5/12/2020	3		Yellow Bullhead	catfish	247	10	314	
20135-1-LNG-1	5/14/2020	1	1	Longnose Gar	gar	787	31	738	100%
20127-1-SG-1	5/6/2020	1	2	Spotted Gar	gar	656	26	1221	98%
20127-1-SG-3	5/6/2020	1		Spotted Gar	gar	652	26	708	
20127-1-LNG-1	5/6/2020	1		Longnose Gar	gar	650	26	665	
20126-1-SG-1	5/5/2020	1		Spotted Gar	gar	646	25	1232	
20126-1-SG-2	5/5/2020	1	3	Spotted Gar	gar	611	24	806	87%
20127-1-SG-2	5/6/2020	1		Spotted Gar	gar	533	21	657	
20135-1-CHP-1	5/14/2020	1	1	Chain Pickerel	pickerel	505	20	1109	93%
20135-1-CHP-2	5/14/2020	1		Chain Pickerel	pickerel	473	19	744	
20133-2-CHP-1	5/12/2020	2		Chain Pickerel	pickerel	471	19	686	
20127-1-CHP-3	5/6/2020	1	2	Chain Pickerel	pickerel	460	18	716	93%
20127-1-CHP-2	5/6/2020	1		Chain Pickerel	pickerel	441	17	655	
20127-1-CHP-1	5/6/2020	1		Chain Pickerel	pickerel	430	17	505	
20127-1-CHP-4	5/6/2020	1		Chain Pickerel	pickerel	427	17	486	
20127-1-CHP-5	5/6/2020	1	3	Chain Pickerel	pickerel	408	16	489	100%
20134-1-CHP-1	5/13/2020	1		Chain Pickerel	pickerel	406	16	550	
20134-1-SS-1	5/13/2020	1	1	Spotted Sucker	sucker	525	21	1793	90%
20128-1-SS-7	5/7/2020	1		Spotted Sucker	sucker	483	19	1395	
20127-1-SS-2	5/6/2020	1		Spotted Sucker	sucker	480	19	1311	
20128-1-SS-1	5/7/2020	1		Spotted Sucker	sucker	475	19	1155	
20135-1-SS-2	5/14/2020	1		Spotted Sucker	sucker	472	19	1359	
20126-1-SS-1	5/5/2020	1	2	Spotted Sucker	sucker	471	19	1271	97%
20128-1-SS-2	5/7/2020	1		Spotted Sucker	sucker	468	18	1121	
20135-1-SS-1	5/14/2020	1		Spotted Sucker	sucker	465	18	1243	
20127-1-SS-8	5/6/2020	1		Spotted Sucker	sucker	461	18	1175	
20128-1-SS-5	5/7/2020	1		Spotted Sucker	sucker	455	18	1036	
20128-1-SS-6	5/7/2020	1	3	Spotted Sucker	sucker	455	18	1028	98%
20134-1-SS-2	5/13/2020	1		Spotted Sucker	sucker	455	18	1190	
20134-1-SS-3	5/13/2020	1		Spotted Sucker	sucker	455	18	1267	
20128-1-SS-3	5/7/2020	1		Spotted Sucker	sucker	449	18	1041	
20127-1-SS-3	5/6/2020	1		Spotted Sucker	sucker	444	17	1064	
20126-1-SS-2	5/5/2020	1	4	Spotted Sucker	sucker	434	17	923	97%
20127-1-SS-6	5/6/2020	1		Spotted Sucker	sucker	434	17	995	
20127-1-SS-7	5/6/2020	1		Spotted Sucker	sucker	434	17	1061	
20127-1-SS-1	5/6/2020	1		Spotted Sucker	sucker	431	17	841	
20134-1-SS-5	5/13/2020	1		Spotted Sucker	sucker	421	17	977	

Table B-1. Compositing Strategy for Upstream Reporting Zone

Individual Sample ID	Date	Zone	Composite #	Species	Combined Species	Total Length (mm)	Total Length (in)	Total Weight (g)	% Length
20127-1-SS-4	5/6/2020	1	5	Spotted Sucker	sucker	418	16	958	96%
20127-1-SS-9	5/6/2020	1		Spotted Sucker	sucker	412	16	839	
20128-1-SS-4	5/7/2020	1		Spotted Sucker	sucker	411	16	849	
20127-1-SS-5	5/6/2020	1		Spotted Sucker	sucker	408	16	796	
20134-1-SS-4	5/13/2020	1		Spotted Sucker	sucker	407	16	904	
20134-1-SS-6	5/13/2020	1		Spotted Sucker	sucker	403	16	848	
20128-1-SS-8	5/7/2020	1	undersized	Spotted Sucker	sucker	334	13	428	
20127-1-BF-1	5/6/2020	1	Not palatable	Bowfin	bowfin	576	23	1904	
20135-1-BF-1	5/14/2020	1		Bowfin	bowfin	544	21	1699	
20126-1-BF-1	5/5/2020	1		Bowfin	bowfin	510	20	1287	

Table B-2. Compositing Strategy for Reporting Zone Adjoining OU2

Individual Sample ID	Date	Zone	Composite #	Species	Combined Species	Total Length (mm)	Total Length (in)	Total Weight (g)	% Length
20139-4-LMB-1	5/18/2020	4	1	Largemouth Bass	bass	395	16	971	92%
20139-4-LMB-2	5/18/2020	4		Largemouth Bass	bass	386	15	865	
20136-4-LMB-1	5/15/2020	4		Largemouth Bass	bass	362	14	900	
20136-4-LMB-2	5/15/2020	4	2	Largemouth Bass	bass	305	12	512	99%
20123-4-LMB-1	5/2/2020	4		Largemouth Bass	bass	304	12	454	
20123-4-LMB-2	5/2/2020	4		Largemouth Bass	bass	302	12	502	
20138-4-LMB-1	5/17/2020	4	3	Largemouth Bass	bass	289	11	404	94%
19340-4-LMB-1	12/6/2019	4		Largemouth Bass	bass	277	11	267	
20139-4-LMB-3	5/18/2020	4		Largemouth Bass	bass	273	11	285	
20123-4-AB-1	5/2/2020	4	4	Alabama Bass	bass	270	11	291	100%
19340-4-LMB-2	12/6/2019	4		Largemouth Bass	bass	270	11	244	
20125-4-LMB-1	5/4/2020	4		Largemouth Bass	bass	270	11	318	
20138-4-WM-2	5/17/2020	4	1	Warmouth	bream	234	9	337	85%
20138-4-RBS-1	5/17/2020	4		Redbreast sunfish	bream	224	9	242	
20138-4-WM-3	5/17/2020	4		Warmouth	bream	223	9	325	
19338-4-WM-1	12/4/2019	4		Warmouth	bream	211	8	182	
20121-4-WM-1	4/30/2020	4		Warmouth	bream	211	8	274	
20125-4-RBS-1	5/4/2020	4		Redbreast sunfish	bream	207	8	232	
20136-4-WM-1	5/15/2020	4		Warmouth	bream	202	8	239	
19337-4-WM-1	12/3/2019	4		Warmouth	bream	200	8	154	
20139-4-WM-1	5/18/2020	4	2	Warmouth	bream	198	8	223	95%
19338-4-WM-2	12/4/2019	4		Warmouth	bream	195	8	157	
20139-4-RES-1	5/18/2020	4		Redear Sunfish	bream	194	8	156	
20138-4-WM-4	5/17/2020	4		Warmouth	bream	192	8	186	
19337-4-RBS-1	12/3/2019	4		Redbreast sunfish	bream	191	8	86	
19337-4-WM-2	12/3/2019	4		Warmouth	bream	191	8	137	
19338-4-RBS-1	12/4/2019	4		Redbreast sunfish	bream	189	7	114	
20138-4-WM-1	5/17/2020	4		Warmouth	bream	188	7	168	
19337-4-RBS-2	12/3/2019	4	3	Redbreast sunfish	bream	184	7	106.5	92%
20138-4-WM-5	5/17/2020	4		Warmouth	bream	181	7	171	
19338-4-RBS-2	12/4/2019	4		Redbreast sunfish	bream	179	7	92	
20137-4-BG-1	5/16/2020	4		Bluegill	bream	177	7	117	
20136-4-BG-1	5/15/2020	4		Bluegill	bream	176	7	123	
20123-4-RBS-1	5/2/2020	4		Redbreast sunfish	bream	175	7	125	
19338-4-WM-3	12/4/2019	4		Warmouth	bream	174	7	109	
20139-4-GRN-2	5/18/2020	4		Green Sunfish	bream	169	7	125	
19338-4-WM-4	12/4/2019	4	4	Warmouth	bream	169	7	93	92%
19338-4-RBS-3	12/4/2019	4		Redbreast sunfish	bream	166	7	69	
19338-4-RBS-4	12/4/2019	4		Redbreast sunfish	bream	163	6	72	
20139-4-RBS-1	5/18/2020	4		Redbreast Sunfish	bream	162	6	94	
20138-4-SPS-1	5/17/2020	4		Spotted Sunfish	bream	161	6	125	
19338-4-RBS-6	12/4/2019	4		Redbreast sunfish	bream	157	6	56	
19337-4-BG-1	12/3/2019	4		Bluegill	bream	155	6	58	
19338-4-RBS-5	12/4/2019	4		Redbreast sunfish	bream	155	6	59	
19338-4-WM-5	12/4/2019	4	5	Warmouth	bream	154	6	73	84%
19337-4-BG-2	12/3/2019	4		Bluegill	bream	153	6	49	
19337-4-WM-3	12/3/2019	4		Warmouth	bream	146	6	58	
20139-4-WM-2	5/18/2020	4		Warmouth	bream	145	6	73	
20139-4-GRN-1	5/18/2020	4		Green Sunfish	bream	142	6	67	
20138-4-BG-1	5/17/2020	4		Bluegill	bream	137	5	51	
20139-4-WM-3	5/18/2020	4		Warmouth	bream	129	5	50	

Table B-2. Compositing Strategy for Reporting Zone Adjoining OU2

Individual Sample ID	Date	Zone	Composite #	Species	Combined Species	Total Length (mm)	Total Length (in)	Total Weight (g)	% Length
20139-4-BG-1	5/18/2020	4	undersized	Bluegill	bream	111	4	27	
19339-5-RBS-1	12/5/2019	5	1A	Redbreast sunfish	bream	165	6	95	97%
20132-5-RBS-1	5/11/2020	5		Redbreast sunfish	bream	163	6	98	
19339-5-RBS-3	12/5/2019	5		Redbreast sunfish	bream	161	6	55	
19339-5-RBS-2	12/5/2019	5		Redbreast sunfish	bream	160	6	61	
20132-5-RBS-2	5/11/2020	5	2A	Redbreast sunfish	bream	155	6	92	91%
20132-5-RBS-5	5/11/2020	5		Redbreast sunfish	bream	153	6	67	
20132-5-RBS-3	5/11/2020	5		Redbreast sunfish	bream	151	6	77	
20132-5-SPS-1	5/11/2020	5		Spotted Sunfish	bream	141	6	76	
20132-5-RBS-4	5/11/2020	5	3A	Redbreast sunfish	bream	139	5	59	95%
20132-5-RBS-6	5/11/2020	5		Redbreast sunfish	bream	135	5	43	
20132-5-RBS-7	5/11/2020	5		Redbreast sunfish	bream	132	5	48	
20132-5-WM-1	5/11/2020	5		Warmouth	bream	132	5	56	
20132-5-RBS-8	5/11/2020	5	4A	Redbreast sunfish	bream	126	5	38	91%
20132-5-SPS-2	5/11/2020	5		Spotted Sunfish	bream	119	5	42	
20132-5-GRN-1	5/11/2020	5		Green Sunfish	bream	115	5	32	
20132-5-RBS-9	5/11/2020	5	5A	Redbreast sunfish	bream	109	4	23	97%
20132-5-SPS-4	5/11/2020	5		Spotted Sunfish	bream	108	4	35	
20132-5-SPS-3	5/11/2020	5		Spotted Sunfish	bream	106	4	31	
20124-4-YBH-1	5/3/2020	4	1	Yellow Bullhead	catfish	282	11	423	100%
20124-4-YBH-2	5/3/2020	4	2	Yellow Bullhead	catfish	262	10	280	97%
20136-4-YBH-1	5/15/2020	4		Yellow Bullhead	catfish	254	10	352	
20138-4-YBH-1	5/17/2020	4	3	Yellow Bullhead	catfish	240	9	282	96%
20123-4-YBH-1	5/2/2020	4		Yellow Bullhead	catfish	230	9	213	
20139-4-BLC-1	5/18/2020	4	1	Black Crappie	crappie	253	10	198	100%
19340-4-BLC-1	12/6/2019	4	2	Black Crappie	crappie	238	9	149	100%
20126-6-LNG-4	5/5/2020	6	1	Longnose Gar	gar	873	34	1368	79%
20126-6-LNG-3	5/5/2020	6		Longnose Gar	gar	826	33	1803	
20122-4-LNG-8	5/1/2020	4		Longnose Gar	gar	725	29	1005	
20122-4-LNG-5	5/1/2020	4		Longnose Gar	gar	704	28	682	
20122-4-LNG-2	5/1/2020	4		Longnose Gar	gar	694	27	798	
20122-4-LNG-7	5/1/2020	4	2	Longnose Gar	gar	690	27	1127	95%
20132-5-LNG-1	5/11/2020	5		Longnose Gar	gar	676	27	827	
20126-6-LNG-2	5/5/2020	6		Longnose Gar	gar	670	26	938	
20126-6-LNG-1	5/5/2020	6		Longnose Gar	gar	662	26	956	
20122-4-LNG-3	5/1/2020	4		Longnose Gar	gar	653	26	722	
20122-4-SG-1	5/1/2020	4	3	Spotted Gar	gar	635	25	989	95%
20124-4-SG-1	5/3/2020	4		Spotted Gar	gar	631	25	881	
20122-4-LNG-6	5/1/2020	4		Longnose Gar	gar	625	25	680	
20122-4-LNG-1	5/1/2020	4		Longnose Gar	gar	621	24	592	
20122-4-LNG-4	5/1/2020	4		Longnose Gar	gar	604	24	548	
20125-5-SG-2	5/4/2020	5	4	Spotted Gar	gar	591	23	900	90%
20123-4-SG-1	5/2/2020	4		Spotted Gar	gar	583	23	849	
20126-6-SG-1	5/5/2020	6		Spotted Gar	gar	580	23	942	
20126-6-SG-2	5/5/2020	6		Spotted Gar	gar	580	23	927	
20122-4-SG-3	5/1/2020	4		Spotted Gar	gar	530	21	577	
20122-4-SG-2	5/1/2020	4	5	Spotted Gar	gar	520	20	598	96%
20122-4-SG-5	5/1/2020	4		Spotted Gar	gar	516	20	546	
20122-4-SG-4	5/1/2020	4		Spotted Gar	gar	510	20	536	
20125-5-SG-1	5/4/2020	5		Spotted Gar	gar	500	20	514	
20123-4-CHP-2	5/2/2020	4	1	Chain Pickerel	pickerel	560	22	1028	88%
20124-4-CHP-1	5/3/2020	4		Chain Pickerel	pickerel	539	21	1185	
19340-4-CHP-1	12/6/2019	4		Chain Pickerel	pickerel	530	21	798	
19340-4-CHP-2	12/6/2019	4		Chain Pickerel	pickerel	511	20	661	
20138-4-CHP-1	5/17/2020	4		Chain Pickerel	pickerel	491	19	910	

Table B-2. Compositing Strategy for Reporting Zone Adjoining OU2

Individual Sample ID	Date	Zone	Composite #	Species	Combined Species	Total Length (mm)	Total Length (in)	Total Weight (g)	% Length
20123-4-CHP-4	5/2/2020	4	2	Chain Pickerel	pickerel	489	19	931	95%
19340-4-CHP-4	12/6/2019	4		Chain Pickerel	pickerel	473	19	578	
20138-4-CHP-3	5/17/2020	4		Chain Pickerel	pickerel	470	19	842	
19340-4-CHP-3	12/6/2019	4		Chain Pickerel	pickerel	469	18	641	
20125-4-CHP-1	5/4/2020	4		Chain Pickerel	pickerel	463	18	696	
20138-4-CHP-2	5/17/2020	4	3	Chain Pickerel	pickerel	454	18	744	97%
20121-4-CHP-1	4/30/2020	4		Chain Pickerel	pickerel	450	18	734	
20123-4-CHP-7	5/2/2020	4		Chain Pickerel	pickerel	449	18	716	
20136-4-CHP-1	5/15/2020	4		Chain Pickerel	pickerel	444	17	756	
20124-4-CHP-2	5/3/2020	4		Chain Pickerel	pickerel	439	17	678	
20136-4-CHP-3	5/15/2020	4	4	Chain Pickerel	pickerel	435	17	609	92%
20123-4-CHP-1	5/2/2020	4		Chain Pickerel	pickerel	433	17	629	
20123-4-CHP-6	5/2/2020	4		Chain Pickerel	pickerel	430	17	686	
20136-4-CHP-2	5/15/2020	4		Chain Pickerel	pickerel	418	16	598	
20124-4-CHP-3	5/3/2020	4		Chain Pickerel	pickerel	400	16	499	
20137-4-CHP-1	5/16/2020	4	5	Chain Pickerel	pickerel	396	16	506	97%
20123-4-CHP-3	5/2/2020	4		Chain Pickerel	pickerel	387	15	515	
20136-4-CHP-4	5/15/2020	4		Chain Pickerel	pickerel	386	15	480	
20121-4-CHP-2	4/30/2020	4		Chain Pickerel	pickerel	385	15	475	
20123-4-CHP-5	5/2/2020	4		Chain Pickerel	pickerel	383	15	480	
20122-4-CHP-1	5/1/2020	4		Chain Pickerel	pickerel	365	14	414	
20139-4-SS-1	5/18/2020	4	1	Spotted Sucker	sucker	475	19	1319	97%
20123-4-SS-2	5/2/2020	4		Spotted Sucker	sucker	470	19	1765	
20122-5-SS-1	5/1/2020	5		Spotted Sucker	sucker	462	18	1309	
20124-4-SS-1	5/3/2020	4		Spotted Sucker	sucker	460	18	1138	
20122-4-SS-1	5/1/2020	4	2	Spotted Sucker	sucker	441	17	1079	98%
20122-4-SS-4	5/1/2020	4		Spotted Sucker	sucker	440	17	1005	
20122-4-SS-5	5/1/2020	4		Spotted Sucker	sucker	440	17	1088	
20121-4-SS-1	4/30/2020	4		Spotted Sucker	sucker	431	17	970	
20124-4-SS-2	5/3/2020	4	3	Spotted Sucker	sucker	429	17	1068	99%
20122-4-SS-2	5/1/2020	4		Spotted Sucker	sucker	427	17	1045	
20136-4-SS-4	5/15/2020	4		Spotted Sucker	sucker	427	17	1044	
20122-4-SS-3	5/1/2020	4		Spotted Sucker	sucker	426	17	1046	
20123-4-SS-1	5/2/2020	4	4	Spotted Sucker	sucker	423	17	916	94%
20136-4-SS-3	5/15/2020	4		Spotted Sucker	sucker	423	17	1005	
20139-4-SS-2	5/18/2020	4		Spotted Sucker	sucker	420	17	1010	
20136-4-SS-1	5/15/2020	4		Spotted Sucker	sucker	396	16	903	
20136-4-SS-2	5/15/2020	4	5	Spotted Sucker	sucker	394	16	869	90%
20125-4-SS-1	5/4/2020	4		Spotted Sucker	sucker	390	15	785	
20125-4-SS-2	5/4/2020	4		Spotted Sucker	sucker	356	14	572	
20123-4-BF-2	5/2/2020	4	Not palatable	Bowfin	bowfin	584	23	1037	
20121-4-BF-1	4/30/2020	4		Bowfin	bowfin	582	23	2143	
20123-4-BF-1	5/2/2020	4		Bowfin	bowfin	577	23	2237	
20121-4-BF-4	4/30/2020	4		Bowfin	bowfin	484	19	1299	
20121-4-BF-3	4/30/2020	4		Bowfin	bowfin	473	19	1299	
20123-4-BF-3	5/2/2020	4		Bowfin	bowfin	460	18	1057	
20121-4-BF-2	4/30/2020	4		Bowfin	bowfin	418	16	995	
20121-4-STB-1	4/30/2020	4	Transient	Striped Bass	striper	593	23	2898	
20124-4-STB-2	5/3/2020	4		Striped Bass	striper	425	17	800	
20121-4-STB-2	4/30/2020	4		Striped Bass	striper	409	16	736	
20124-4-STB-1	5/3/2020	4		Striped Bass	striper	401	16	698	
20139-4-STB-1	5/18/2020	4		Striped Bass	striper	400	16	728	
20136-4-STB-1	5/15/2020	4		Striped Bass	striper	385	15	598	

Table B-3. Compositing Strategy for Downstream Reporting Zone

Individual Sample ID	Date	Zone	Composite #	Species	Combined Species	Total Length (mm)	Total Length (in)	Total Weight (g)	% Length
20139-7-LMB-1	5/18/2020	7	1	Largemouth Bass	bass	447	18	1369	100%
20136-7-LMB-1	5/15/2020	7	2	Largemouth Bass	bass	315	12	498	97%
20139-7-LMB-2	5/18/2020	7		Largemouth Bass	bass	304	12	443	
20135-7-LMB-4	5/14/2020	7	3	Largemouth Bass	bass	285	11	266	91%
20135-7-LMB-2	5/14/2020	7		Largemouth Bass	bass	282	11	317	
20135-7-LMB-1	5/14/2020	7		Largemouth Bass	bass	271	11	298	
20135-7-LMB-3	5/14/2020	7		Largemouth Bass	bass	259	10	255	
20135-7-RBS-1	5/14/2020	7	1	Redbreast Sunfish	bream	211	8	248	77%
20135-7-BG-1	5/14/2020	7		Bluegill	bream	186	7	150	
20137-7-BG-1	5/16/2020	7		Bluegill	bream	186	7	137	
20134-7-RBS-2	5/13/2020	7		Redbreast Sunfish	bream	172	7	150	
20136-7-SPS-1	5/15/2020	7		Spotted Sunfish	bream	170	7	129	
20134-7-RBS-1	5/13/2020	7		Redbreast Sunfish	bream	163	6	111	
20136-7-WM-1	5/15/2020	7	2	Warmouth	bream	163	6	102	83%
20135-7-RES-1	5/14/2020	7		Redear Sunfish	bream	152	6	73	
20139-7-BG-1	5/18/2020	7		Bluegill	bream	151	6	83	
20136-7-SPS-2	5/15/2020	7		Spotted Sunfish	bream	143	6	79	
20133-7-BG-1	5/12/2020	7		Bluegill	bream	141	6	61	
20133-7-RBS-1	5/12/2020	7		Redbreast Sunfish	bream	135	5	53	
20133-7-BG-2	5/12/2020	7	3	Bluegill	bream	134	5	50	86%
20133-7-WM-1	5/12/2020	7		Warmouth	bream	124	5	46	
20133-7-BG-3	5/12/2020	7		Bluegill	bream	121	5	36	
20134-7-BG-1	5/13/2020	7		Bluegill	bream	120	5	38	
20137-SPS-1	5/16/2020	7		Spotted Sunfish	bream	119	5	47	
20134-7-BG-2	5/13/2020	7		Bluegill	bream	115	5	29	
20134-7-RBS-3	5/13/2020	7	4	Redbreast Sunfish	bream	115	5	35	89%
20133-7-RBS-3	5/12/2020	7		Redbreast Sunfish	bream	114	4	30	
20139-7-BG-2	5/18/2020	7		Bluegill	bream	114	4	26	
20134-7-RBS-4	5/13/2020	7		Redbreast Sunfish	bream	113	4	30	
20133-7-RBS-2	5/12/2020	7		Redbreast Sunfish	bream	110	4	26	
20135-7-WM-1	5/14/2020	7		Warmouth	bream	102	4	23	
20133-7-BG-4	5/12/2020	7	5	Bluegill	bream	101	4	20	91%
20133-7-RBS-4	5/12/2020	7		Redbreast Sunfish	bream	101	4	19	
20136-7-BG-3	5/15/2020	7		Bluegill	bream	100	4	22	
20136-7-BG-1	5/15/2020	7		Bluegill	bream	95	4	19	
20136-7-BG-4	5/15/2020	7		Bluegill	bream	93	4	16	
20136-7-BG-2	5/15/2020	7		Bluegill	bream	92	4	13	
20133-7-CC-1	5/12/2020	7	1	Channel Catfish	catfish	422	17	833	100%
20136-7-YBH-1	5/15/2020	7	2	Yellow Bullhead	catfish	320	13	657	100%
20136-7-BLC-1	5/15/2020	7	1	Black Crappie	crappie	270	11	337	100%
20134-7-LNG-2	5/13/2020	7	1	Longnose Gar	gar	904	36	2501	96%
20133-7-LNG-4	5/12/2020	7		Longnose Gar	gar	903	36	2000	
20135-7-LNG-1	5/14/2020	7		Longnose Gar	gar	869	34	2153	
20134-7-LNG-3	5/13/2020	7	2	Longnose Gar	gar	780	31	1307	87%
20135-7-LNG-2	5/14/2020	7		Longnose Gar	gar	770	30	1062	
20134-7-LNG-1	5/13/2020	7		Longnose Gar	gar	752	30	1302	
20133-7-LNG-2	5/12/2020	7		Longnose Gar	gar	700	28	789	
20134-7-LNG-7	5/13/2020	7		Longnose Gar	gar	681	27	829	

Table B-3. Compositing Strategy for Downstream Reporting Zone

Individual Sample ID	Date	Zone	Composite #	Species	Combined Species	Total Length (mm)	Total Length (in)	Total Weight (g)	% Length
20133-7-LNG-5	5/12/2020	7	3	Longnose Gar	gar	661	26	753	94%
20134-7-LNG-8	5/13/2020	7		Longnose Gar	gar	660	26	777	
20134-7-LNG-4	5/13/2020	7		Longnose Gar	gar	657	26	703	
20134-7-LNG-6	5/13/2020	7		Longnose Gar	gar	650	26	797	
20133-7-LNG-1	5/12/2020	7		Longnose Gar	gar	647	25	750	
20134-7-LNG-5	5/13/2020	7		Longnose Gar	gar	639	25	750	
20133-7-LNG-3	5/12/2020	7		Longnose Gar	gar	620	24	624	
20136-7-CHP-3	5/15/2020	7	1	Chain Pickerel	pickerel	571	22	1228	100%
20134-7-CHP-1	5/13/2020	7	2	Chain Pickerel	pickerel	462	18	838	92%
20139-7-CHP-1	5/18/2020	7		Chain Pickerel	pickerel	434	17	620	
20136-7-CHP-1	5/15/2020	7		Chain Pickerel	pickerel	427	17	643	
20136-7-CHP-2	5/15/2020	7	3	Chain Pickerel	pickerel	382	15	460	100%
20137-7-SS-1	5/16/2020	7	1	Spotted Sucker	sucker	450	18	1052	100%
20139-7-SS-3	5/18/2020	7		Spotted Sucker	sucker	448	18	1151	
20135-7-SS-2	5/14/2020	7	2	Spotted Sucker	sucker	440	17	1203	95%
20135-7-SS-1	5/14/2020	7		Spotted Sucker	sucker	416	16	979	
20139-7-SS-2	5/18/2020	7	3	Spotted Sucker	sucker	365	14	549	73%
20139-7-SS-1	5/18/2020	7		Spotted Sucker	sucker	266	10	279	
20138--7-BF-1	5/17/2020	7	Not palatable	Bowfin	bowfin	690	27	3733	
20134-7-BF-1	5/13/2020	7		Bowfin	bowfin	522	21	1506	
20138--7-BF-2	5/17/2020	7		Bowfin	bowfin	515	20	1412	
20136-7-BF-1	5/15/2020	7		Bowfin	bowfin	436	17	874	
20138-7-STB-1	5/17/2020	7	Transient	Striped Bass	striper	483	19	1212	
20136-7-STB-3	5/15/2020	7		Striped Bass	striper	465	18	1072	
20136-7-STB-1	5/15/2020	7		Striped Bass	striper	460	18	1191	
20140-7-STB-1	5/19/2020	7		Striped Bass	striper	438	17	855	
20136-7-STB-5	5/15/2020	7		Striped Bass	striper	430	17	910	
20138-7-STB-2	5/17/2020	7		Striped Bass	striper	430	17	940	
20136-7-STB-4	5/15/2020	7		Striped Bass	striper	422	17	810	
20135-7-STB-1	5/14/2020	7		Striped Bass	striper	416	16	949	
20136-7-STB-6	5/15/2020	7		Striped Bass	striper	412	16	792	
20138-7-STB-3	5/17/2020	7		Striped Bass	striper	382	15	663	
20136-7-STB-2	5/15/2020	7		Striped Bass	striper	381	15	681	
20134-7-STB-1	5/13/2020	7		Striped Bass	striper	311	12	351	
20138-7-STB-4	5/17/2020	7		Striped Bass	striper	300	12	276	