December 5, 2022

2022 Water and Fish Collection Project – Status Update

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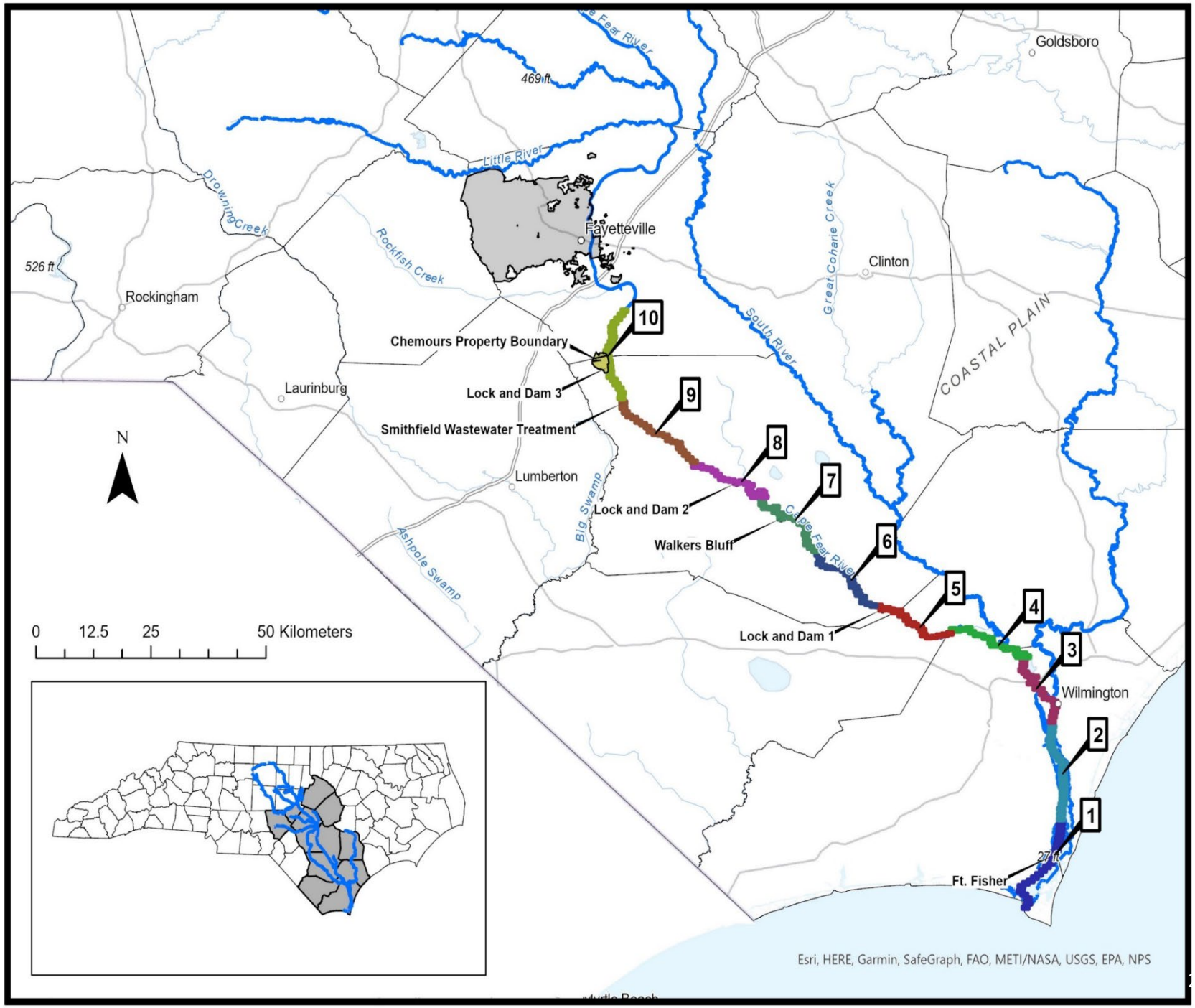
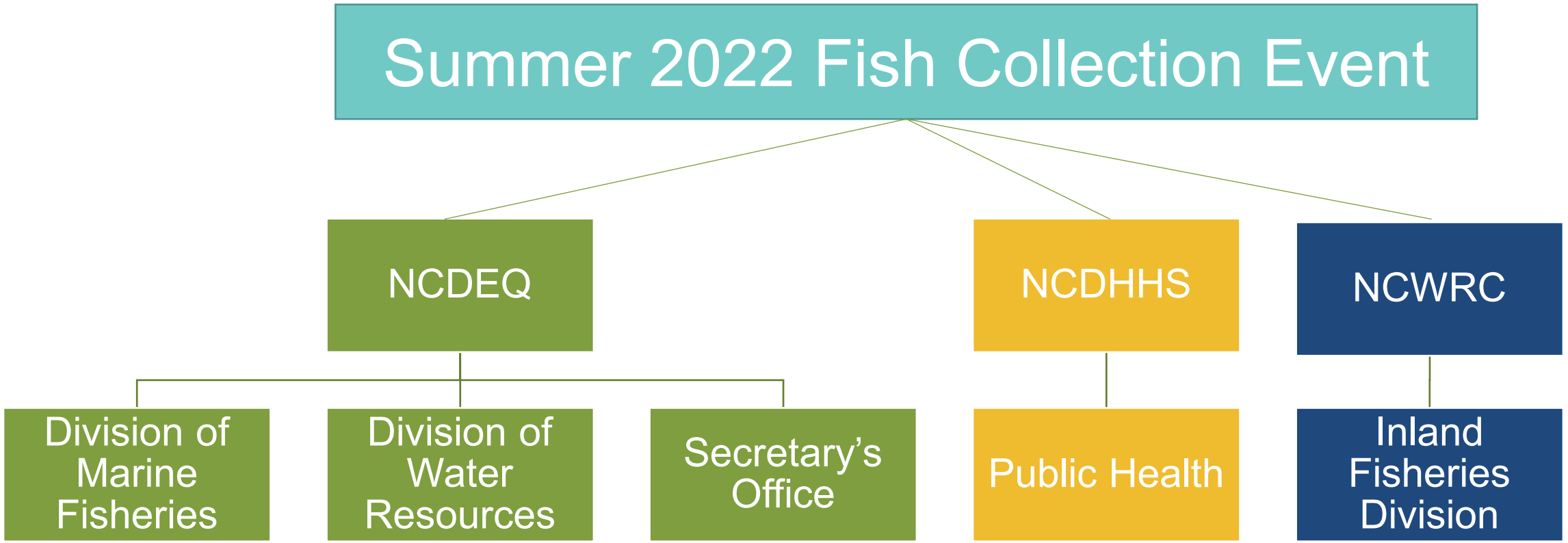
DEQ Environmental Toxicologist

2022 Fish & Surface Water Collection Project

Overview



Collaborative Effort



Department of Environmental Quality

"Legacy" PFAS

Consent Order PFAS

PFAS in North Carolina – all will be reported for fish tissue and any other PFAS able to de analytically detected.

EPA PFAS RoadMap Compounds

- PFBS
- PFHxS
- PFOS
- PFOA
- PFBA
- PFHxA
- PFNA
- GenX
- PFDA

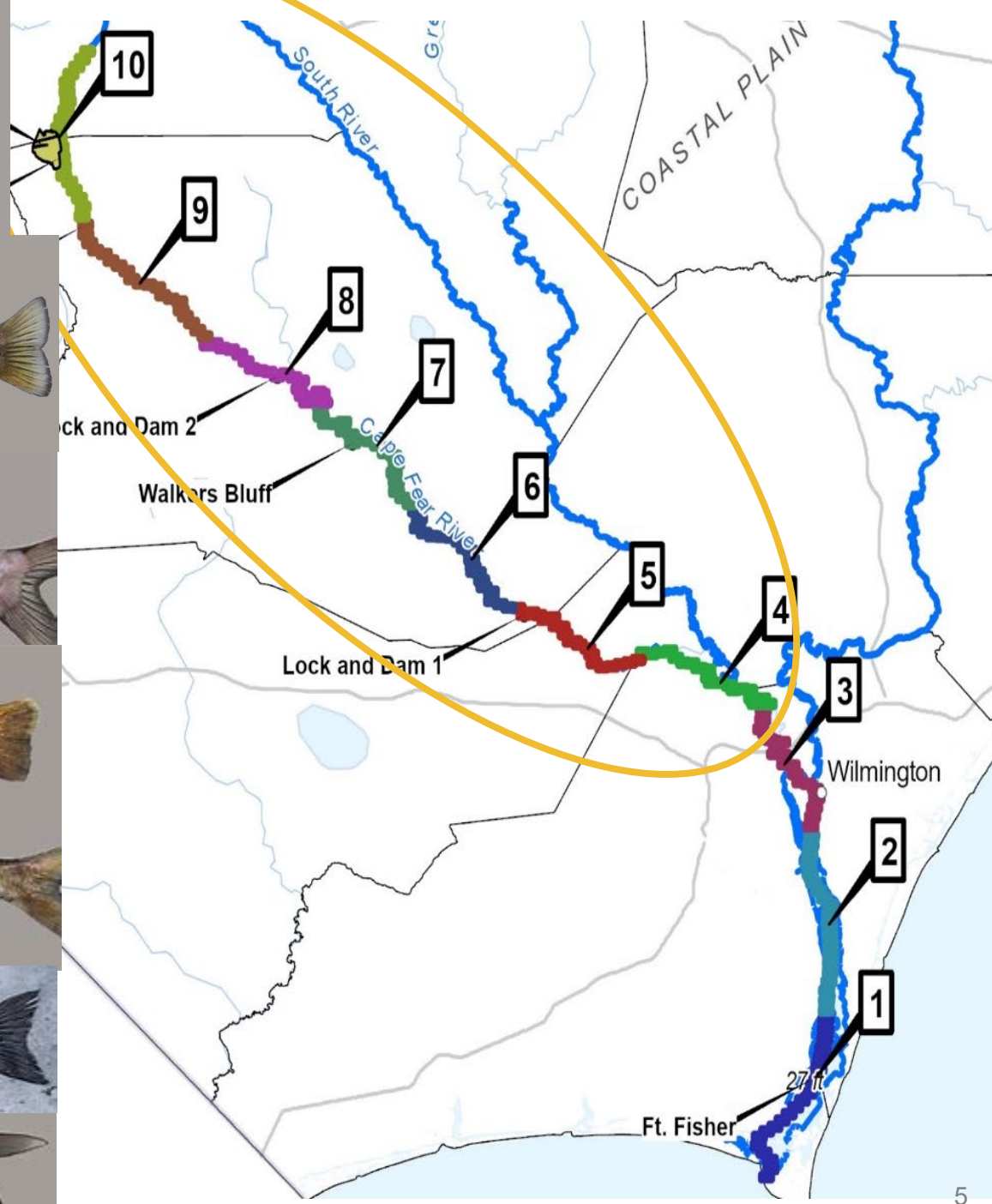
Non-EPA PFAS RoadMap Compounds

- PFHpA
- PFMOAA
- PMPA
- PFO2HxA
- PEPA
- PFO3OA
- PFO4DA
- PFO5DA
- HydroEVE
- PFPeA
- Nafion BPs

Department of Environmental Quality

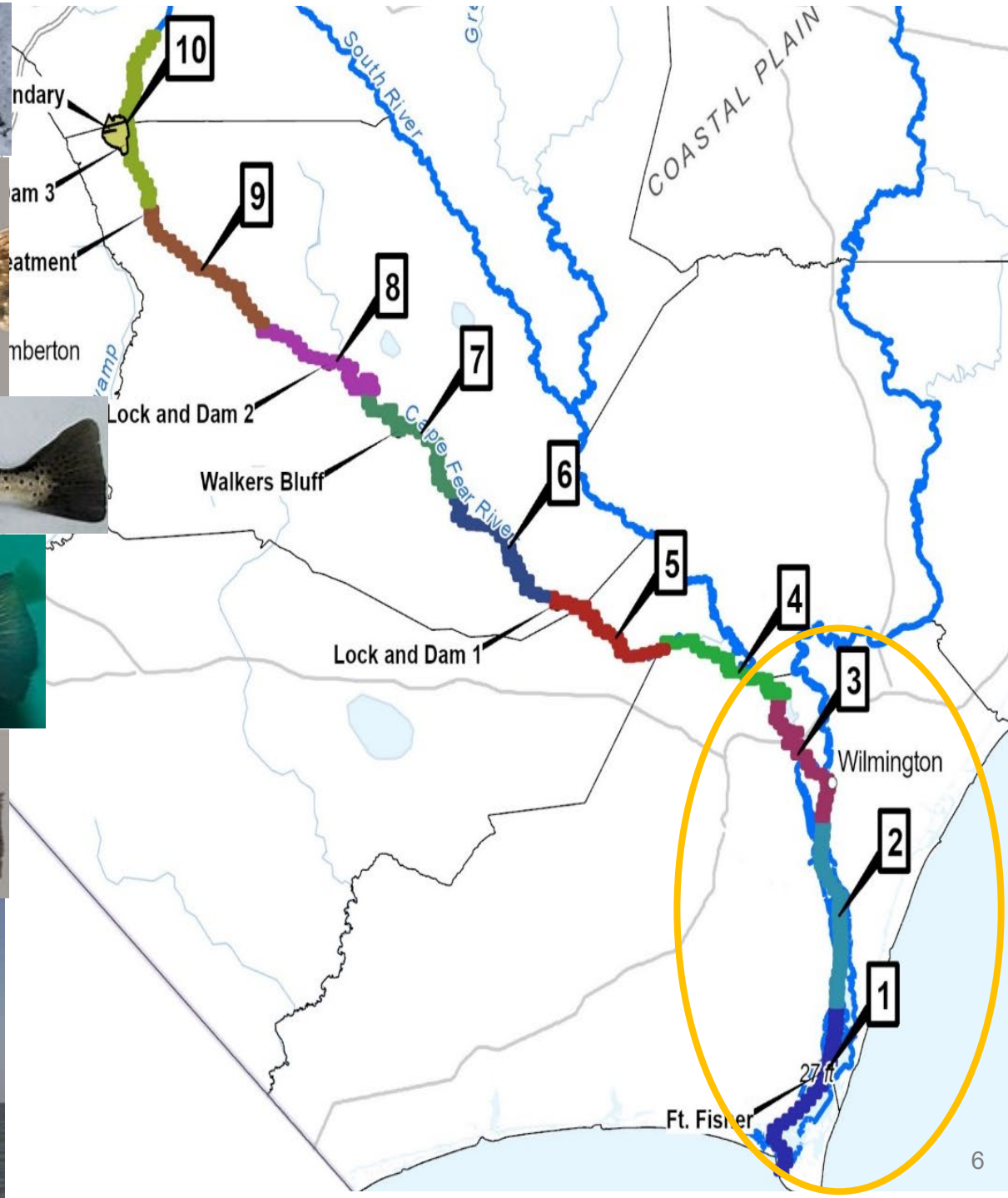
2022 Fish Collection Sampling Plans

Freshwater Species



2022 Fish Collection Sampling Plans

Marine Species

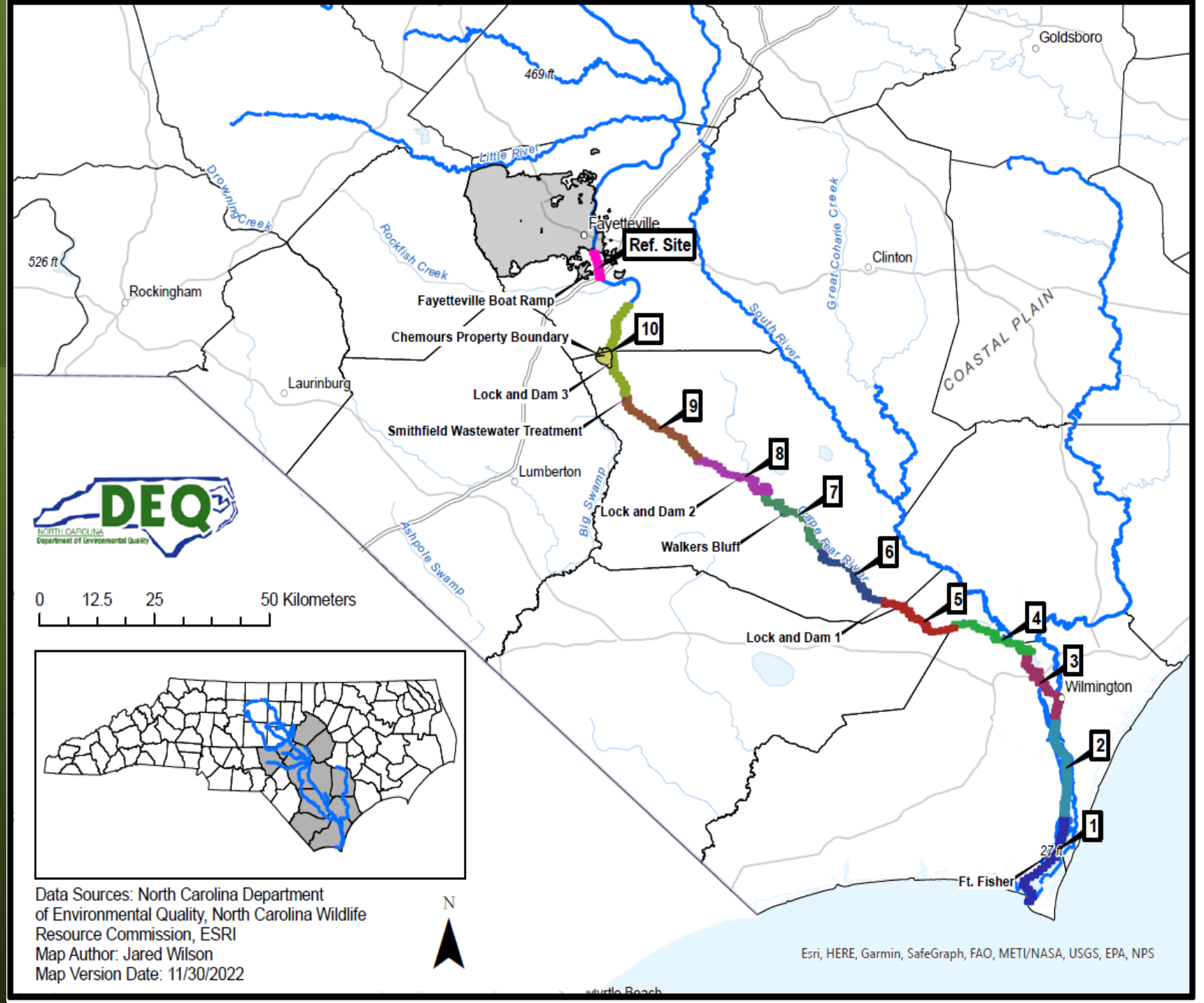


Fish Collection and Processing

2022 Fish & Surface Water Collection Project

-Study Site Update

-BAF Derivation



2022 Fish Collection Sampling Progress

Updated 21 Nov2022

Total Fish Collected: 278

SITE COMPLETE	
Site 1	
Species	Count
Black Drum	3
Southern Flounder	5
Atlantic Croaker	5
Sheepshead	5
SITE COMPLETE	

SITE COMPLETE	
Site 2	
Species	Count
Southern Flounder	5
Black Drum	5
Speckled Trout	5
Sheepshead	5
Red Drum	5
Striped Bass	2
Atlantic Croaker	3
SITE COMPLETE	

Site 3	
Species	Count
Flathead Catfish	2
Blue Catfish	4
Striped Bass	8
Atlantic Croaker	5
Southern Flounder	0

Sent for Analysis

SITE COMPLETE	
Site 4	
Species	Count
Redear Sunfish	5
Bluegill Sunfish	5
Largemouth Bass	5
Blue Catfish	5
Flathead Catfish	5
SITE COMPLETE	

Sent for Analysis

SITE COMPLETE	
Site 5	
Species	Count
Striped Bass	5
Bluegill Sunfish	5
Channel Catfish	5
Redear Sunfish	5
Largemouth Bass	5
Flathead Catfish	5
Blue Catfish	5
SITE COMPLETE	

Sent for Analysis

SITE COMPLETE	
Reference Site	
Species	Count
American Shad	5
Blue Catfish	3
Bluegill Sunnfish	5
Channel Catfish	3
Largemouth Bass	3
SITE COMPLETE	

Data Received

SITE COMPLETE	
Site 6	
Species	Count
Redear Sunfish	5
Bluegill Sunfish	5
Largemouth Bass	5
Blue Catfish	5
Flathead Catfish	5
SITE COMPLETE	

Data Received

SITE COMPLETE	
Site 7	
Species	Count
Redear Sunfish	5
Bluegill Sunfish	5
Largemouth Bass	5
Flathead Catfish	5
Blue Catfish	5
SITE COMPLETE	

Data Received

SITE COMPLETE	
Site 8	
Species	Count
Redear Sunfish	5
Bluegill Sunfish	5
Striped Bass	5
Largemouth Bass	5
Flathead Catfish	5
Blue Catfish	5
SITE COMPLETE	

Data in QA Review

SITE COMPLETE	
Site 9	
Species	Count
Redear Sunfish	5
Bluegill Sunfish	5
Largemouth Bass	2
Flathead Catfish	5
Blue Catfish	5
SITE COMPLETE	

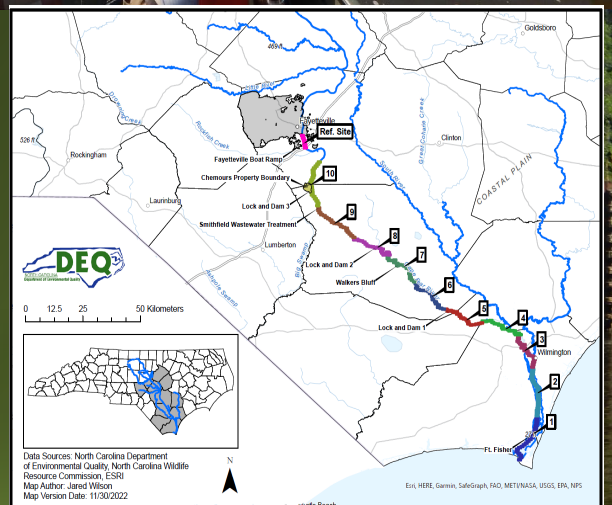
Data Analysis Underway

SITE COMPLETE	
Site 10	
Species	Count
Redear Sunfish	4
Bluegill Sunfish	5
American Shad	5
Largemouth Bass	6
Flathead Catfish	5
Blue Catfish	5
SITE COMPLETE	

A surface waster sample was collected daily with every fish collection
Many site have multiple surface water samples.


DANGER
VIOLENT TURBULENCE
FOR 150 Ft
BELOW DAM

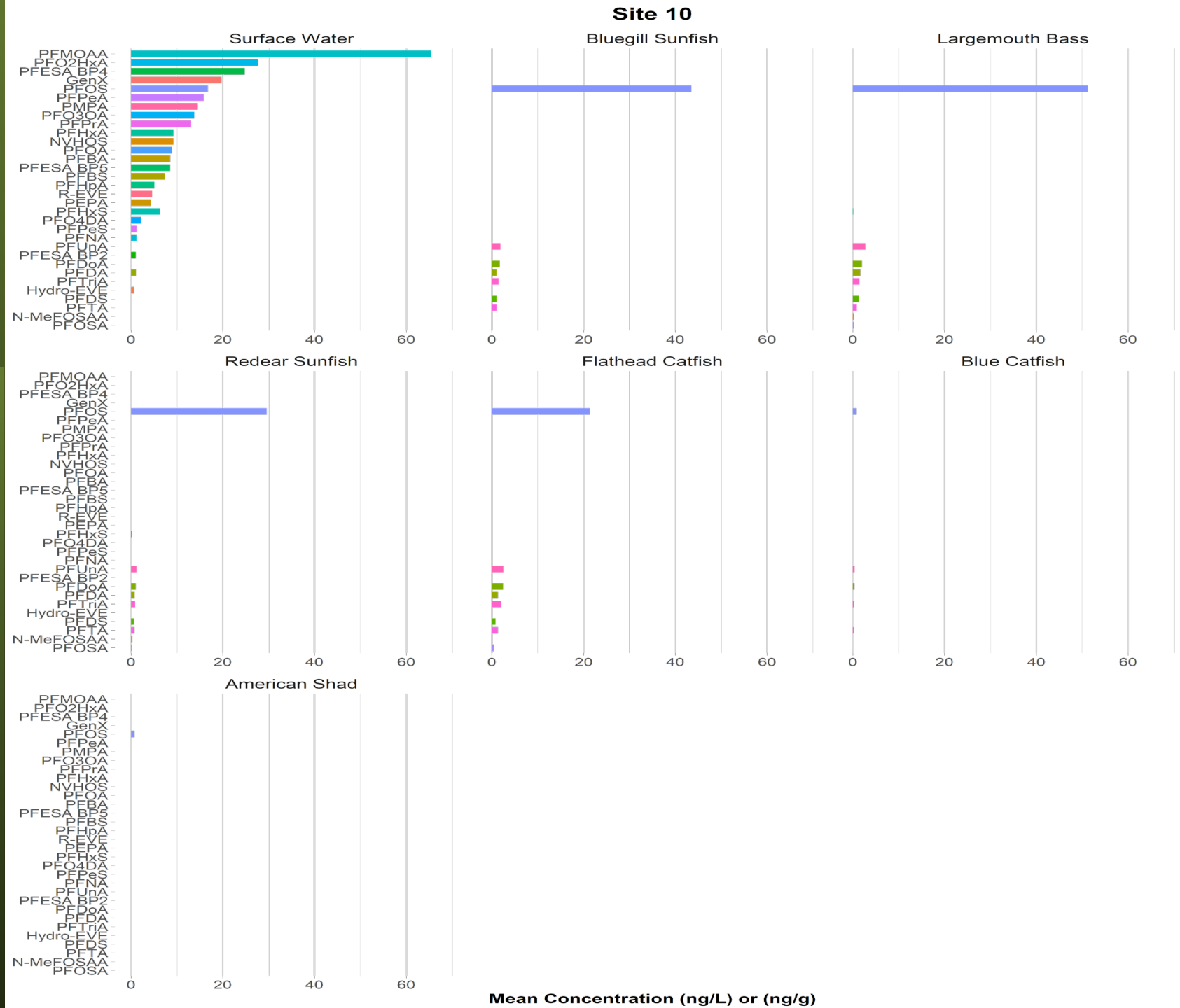
Site 10


Goldsboro
Ref. Site
Fayetteville Boat Ramp
Chemours Property Boundary
Clinton
Rockingham
Laurinburg
Lock and Dam 3
Smithfield Wastewater Treatment
Lumberton
Lock and Dam 2
Walkers Bluff
Lock and Dam 1
Wilmington
Ft. Fisher
COASTAL PLAIN
DEQ
0 12.5 25 50 Kilometers
Data Sources: North Carolina Department of Environmental Quality, North Carolina Wildlife Resource Commission, ESRI
Map Author: Jared Wilson
Map Version Date: 11/30/2022

Site 10

Site 10

Preliminary Data Analysis

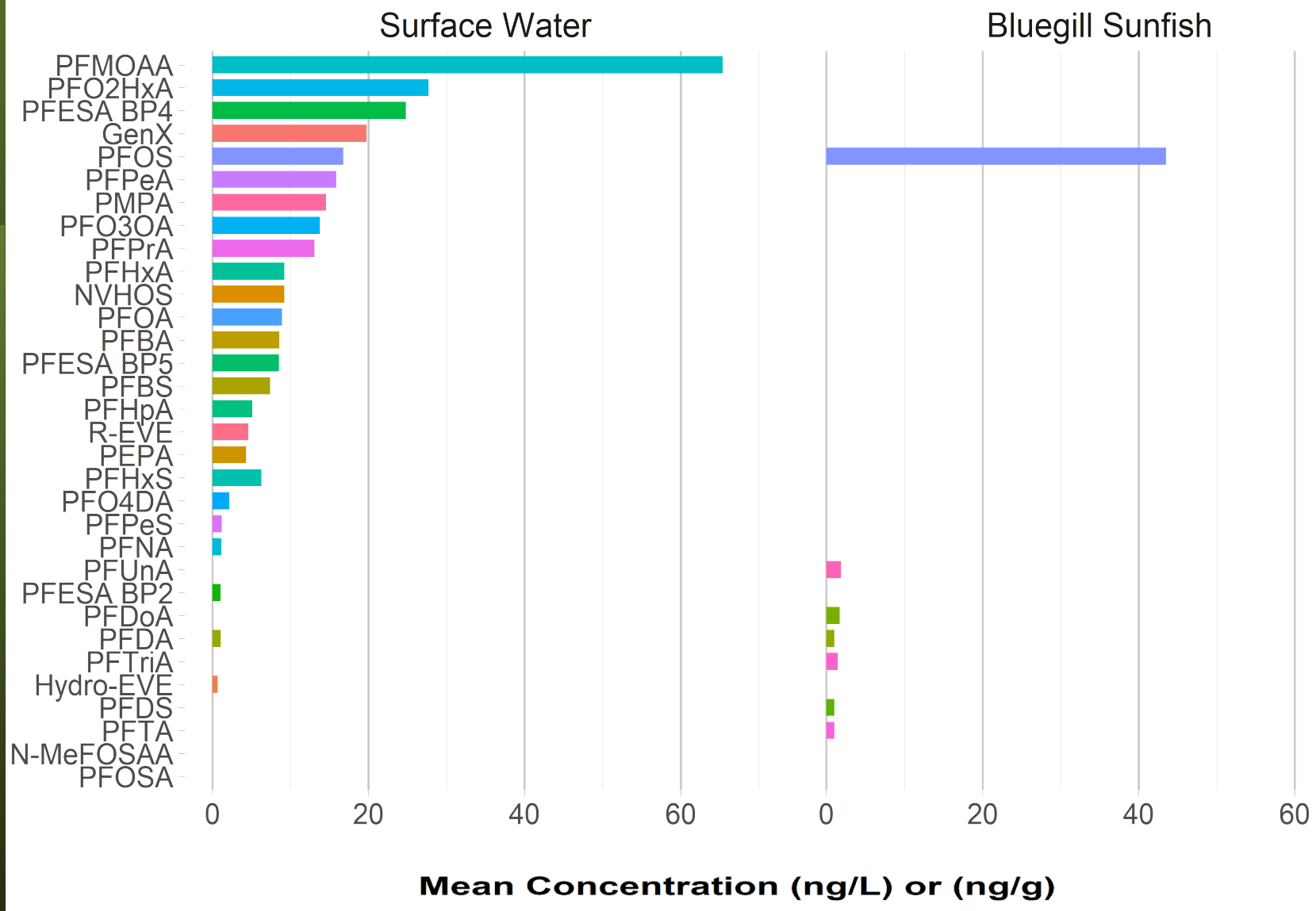


Site 10

Preliminary Data Analysis

Bluegill Sunfish

Site 10

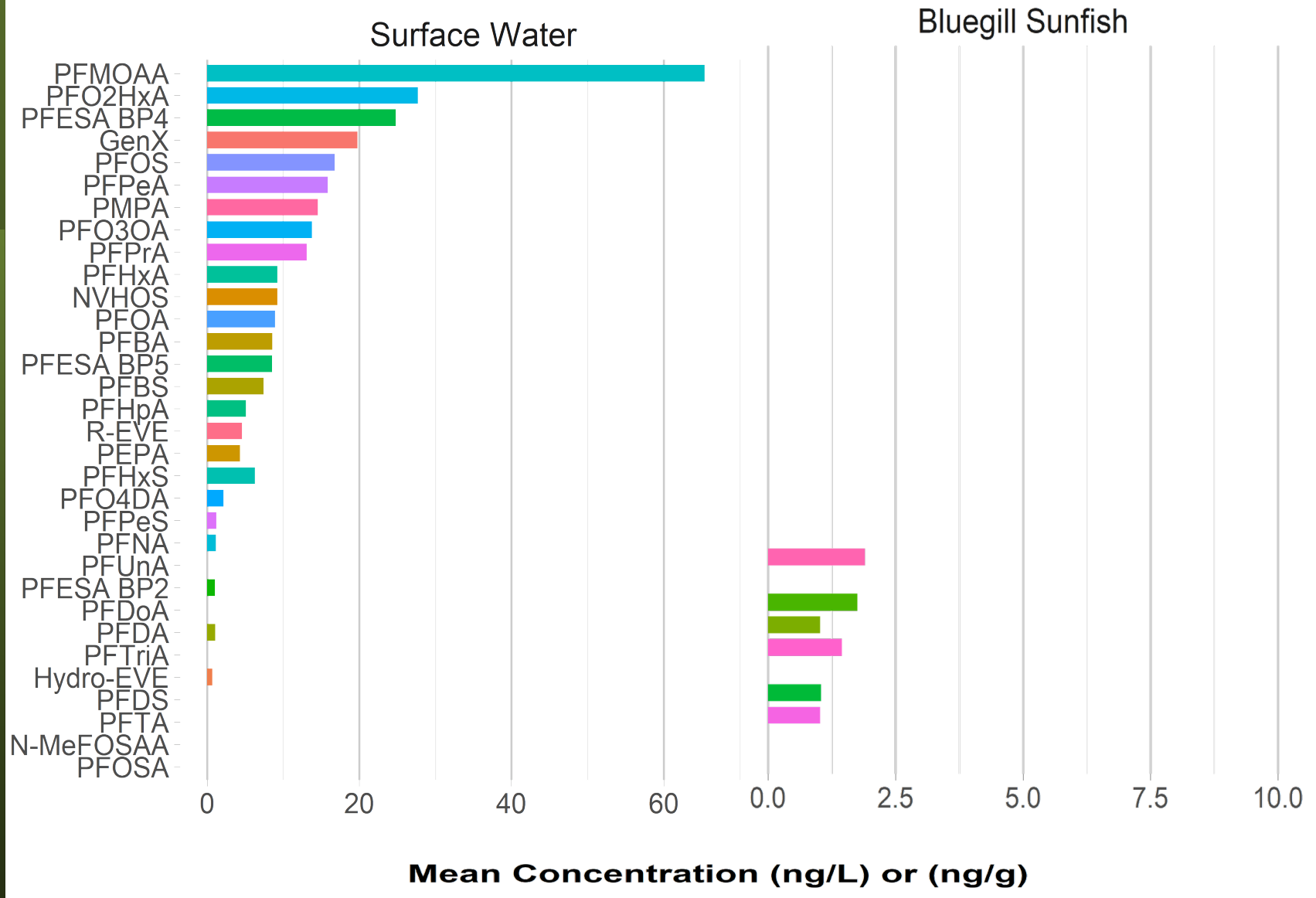


Site 10

Preliminary Data Analysis

Bluegill Sunfish

Site 10

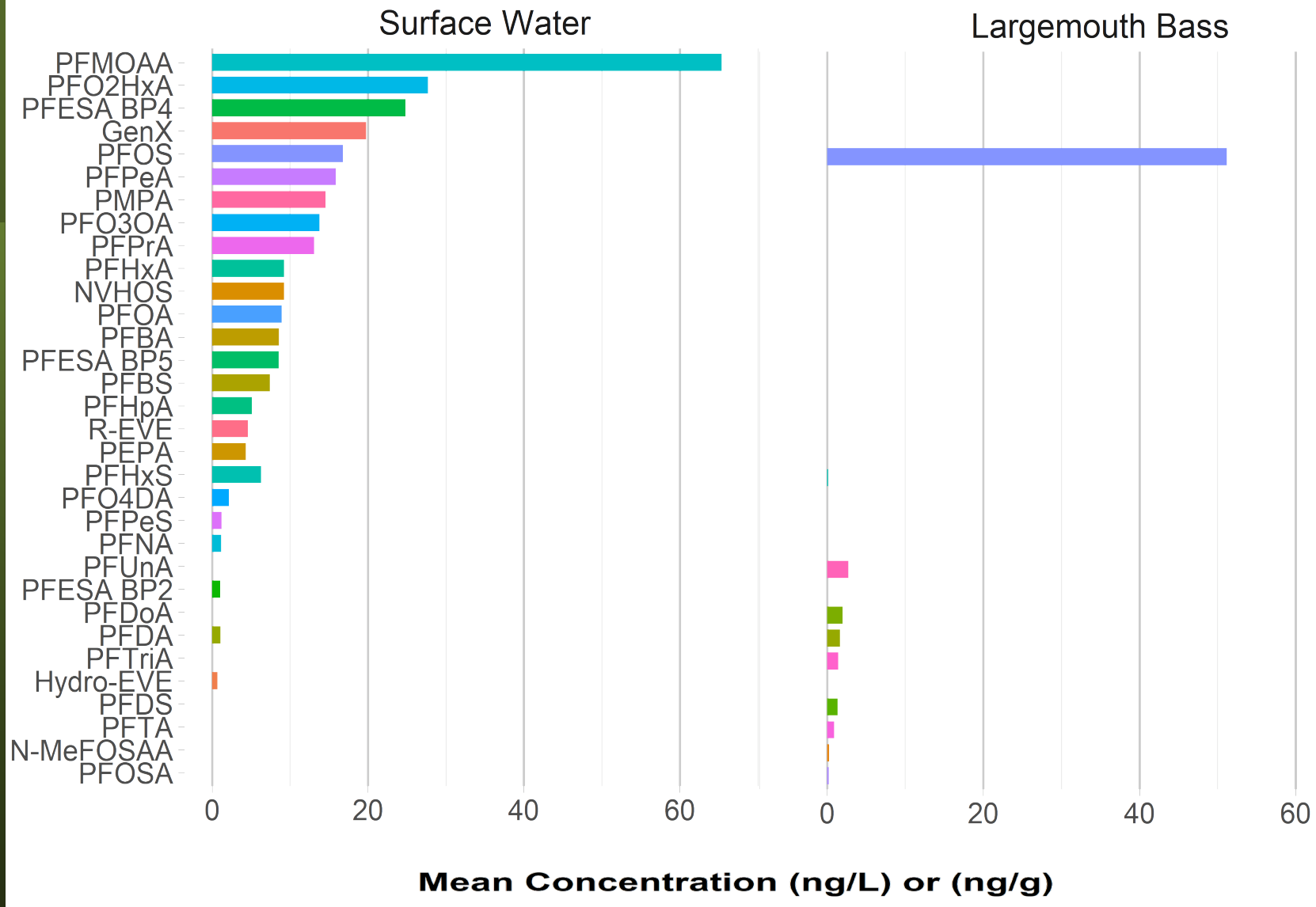


Site 10

Preliminary Data Analysis

Largemouth Bass

Site 10

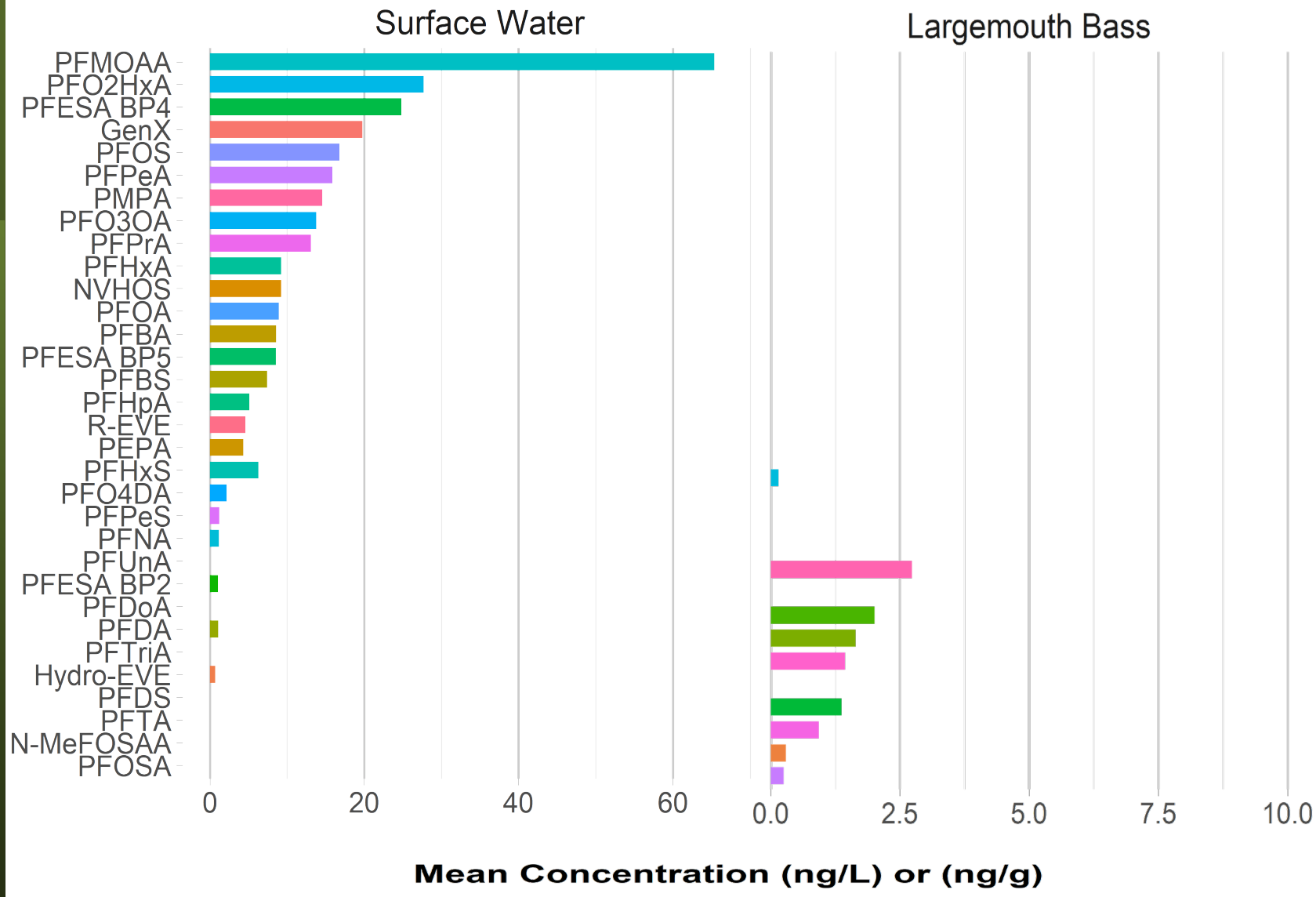


Site 10

Preliminary Data Analysis

Largemouth Bass

Site 10

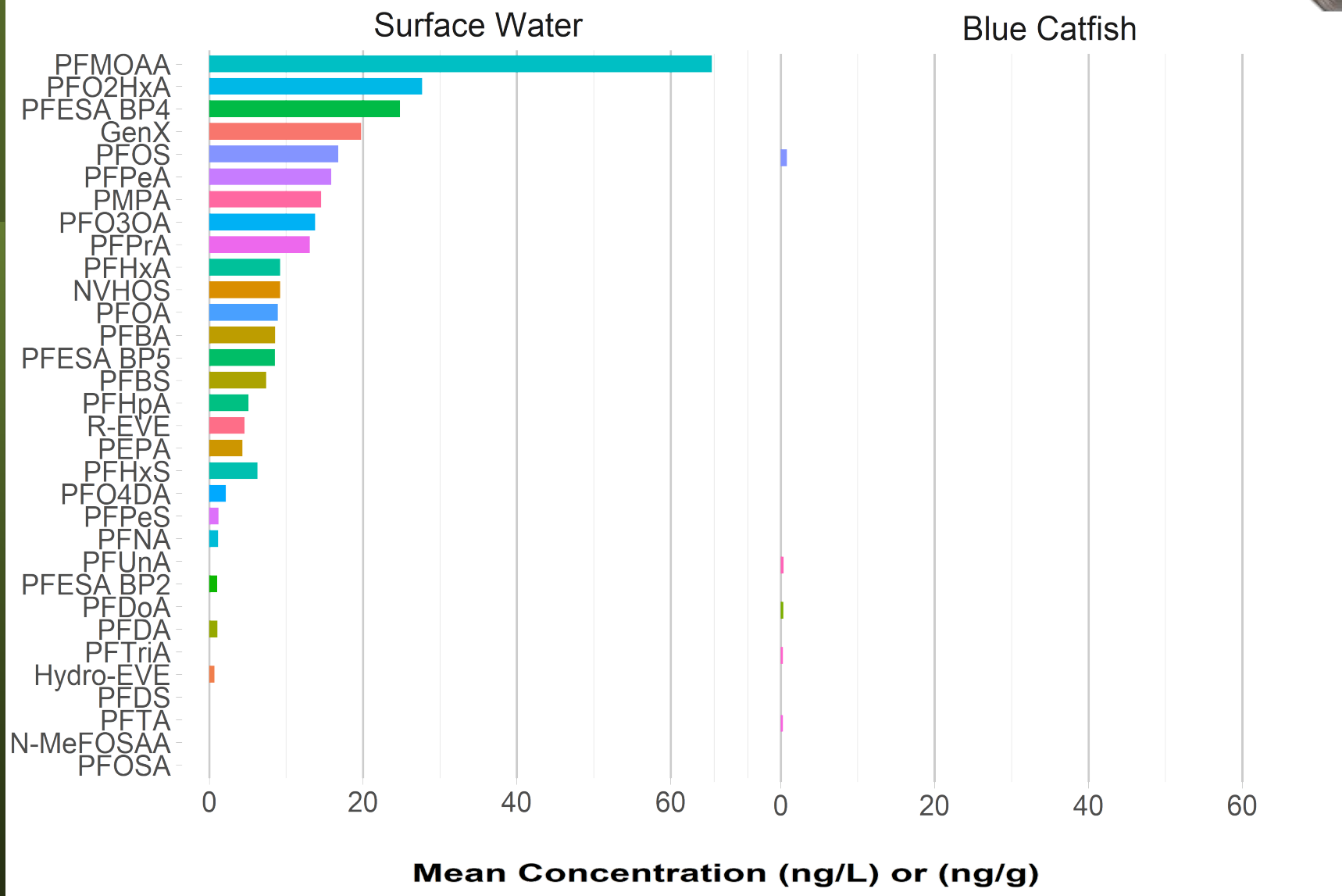


Site 10

Preliminary Data Analysis

Blue Catfish

Site 10

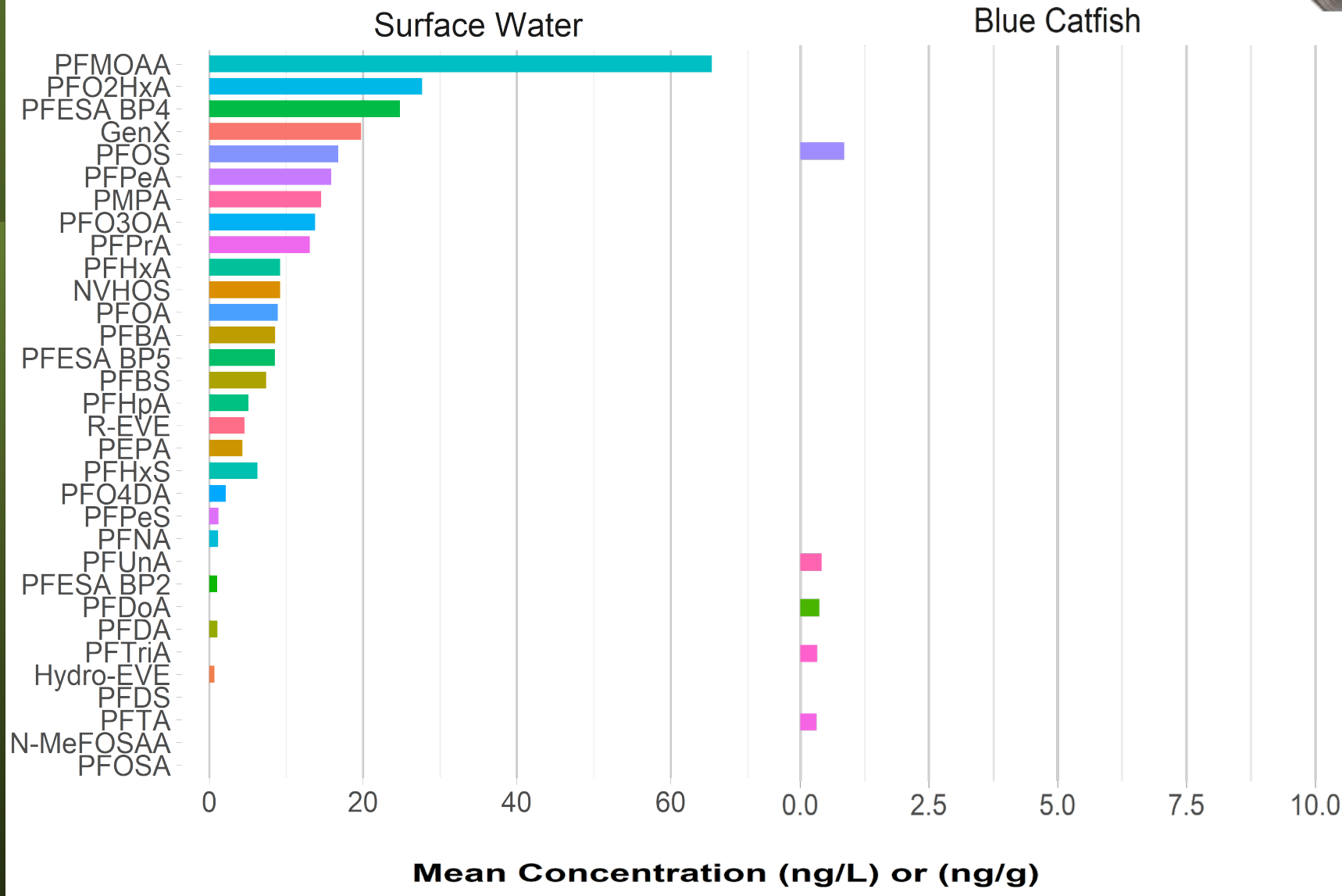


Site 10

Preliminary Data Analysis

Blue Catfish

Site 10

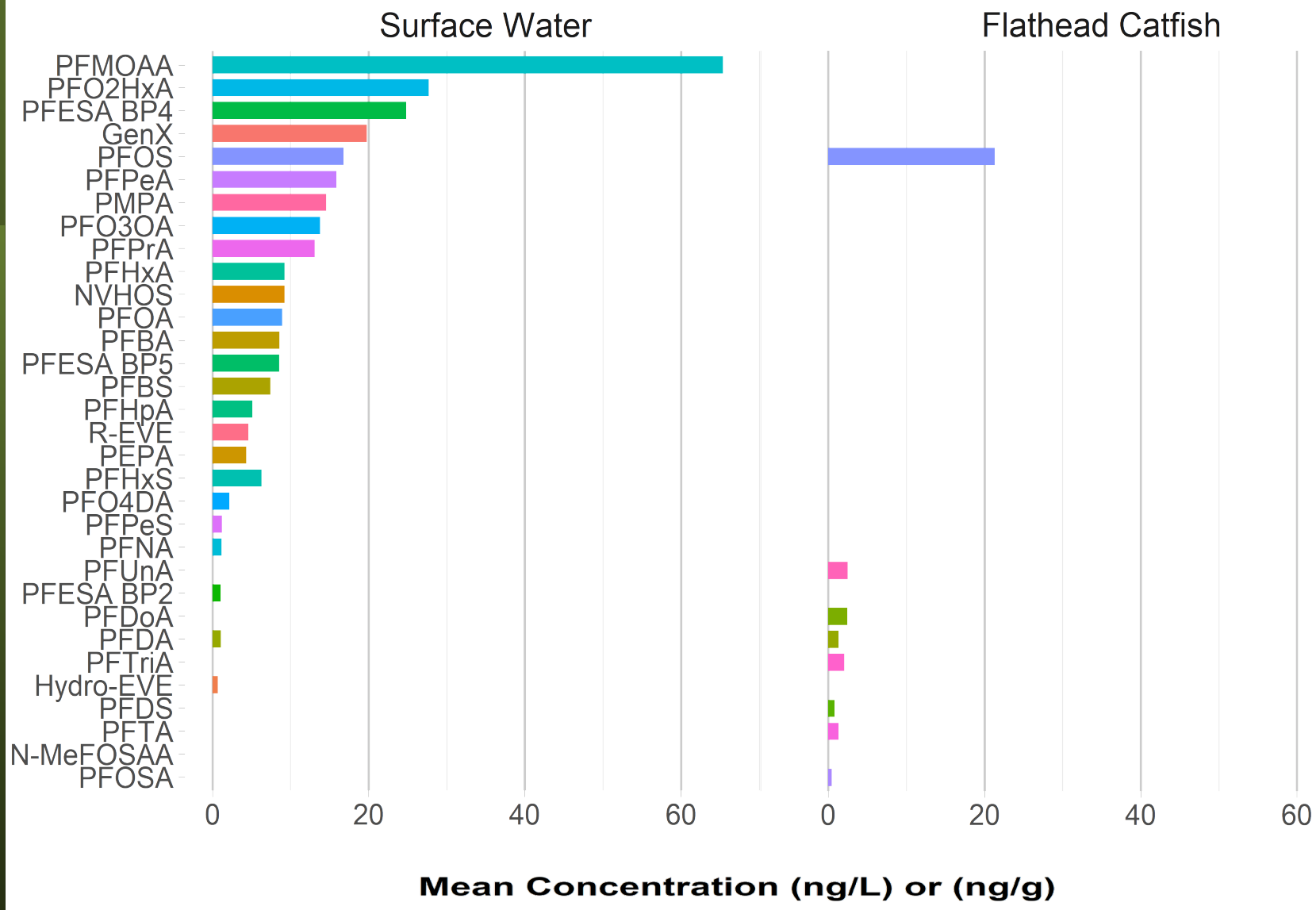


Site 10

Preliminary Data Analysis

Flathead Catfish

Site 10

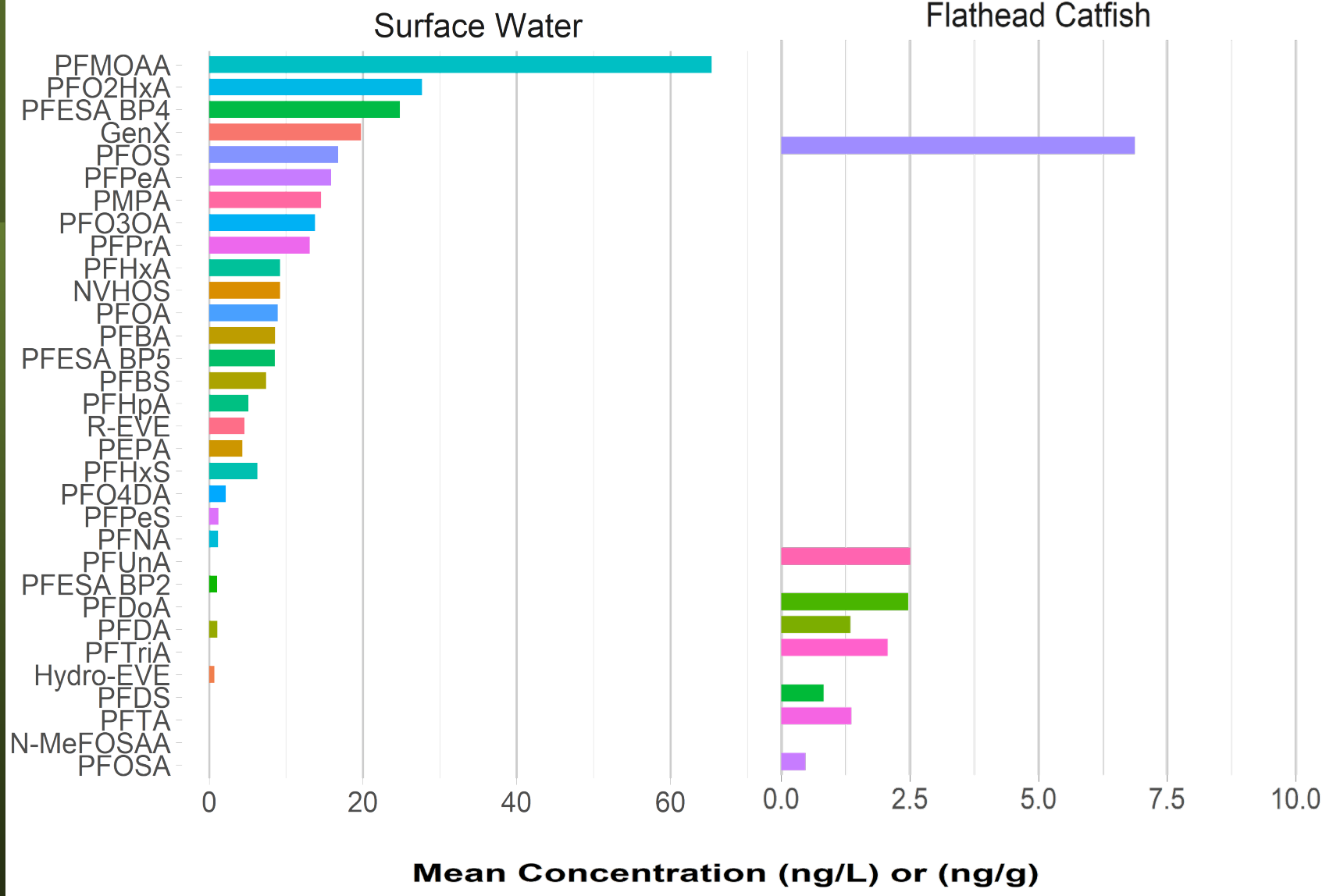


Site 10

Preliminary Data Analysis

Flathead Catfish

Site 10

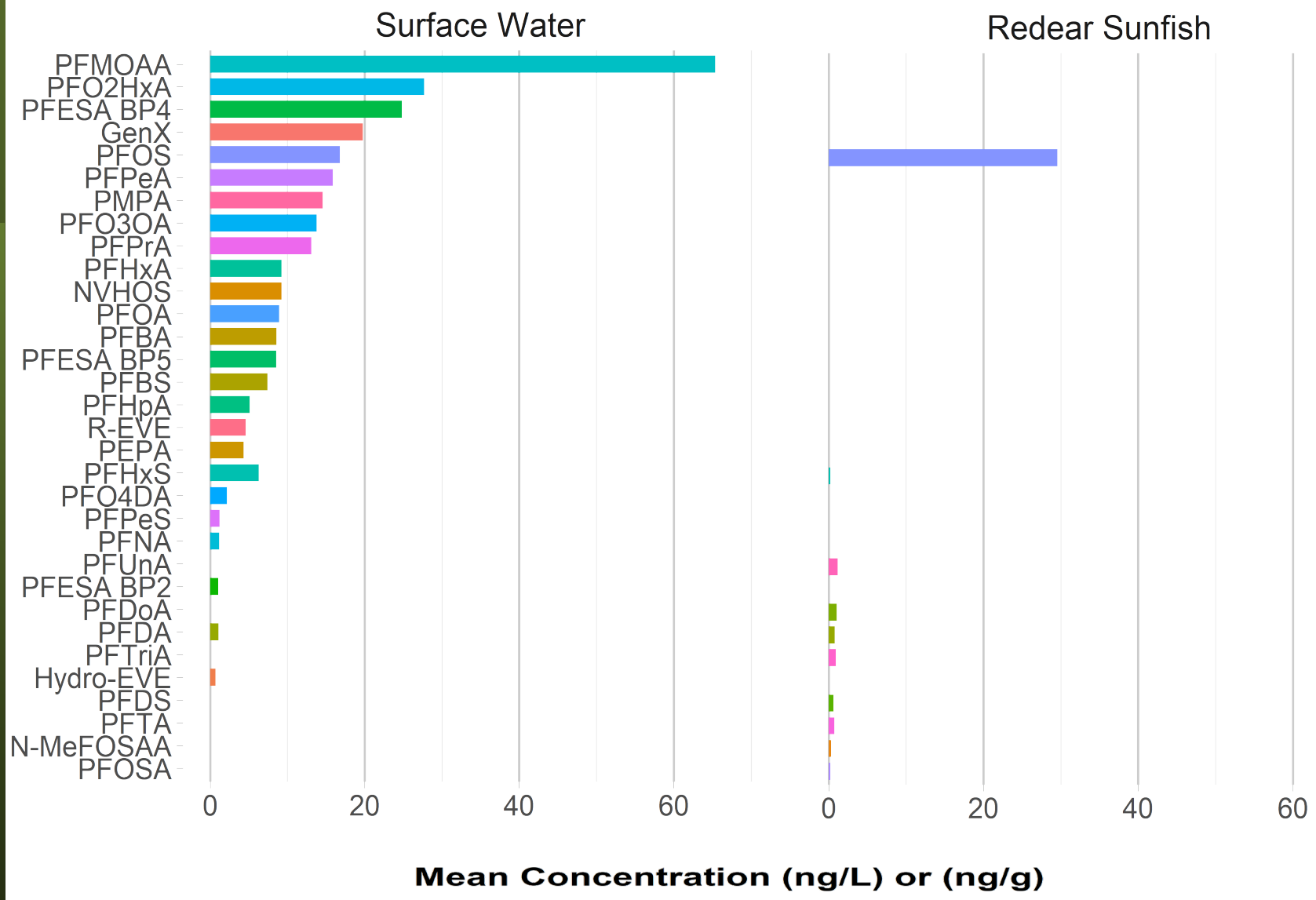


Site 10

Preliminary Data Analysis

Redear Sunfish

Site 10

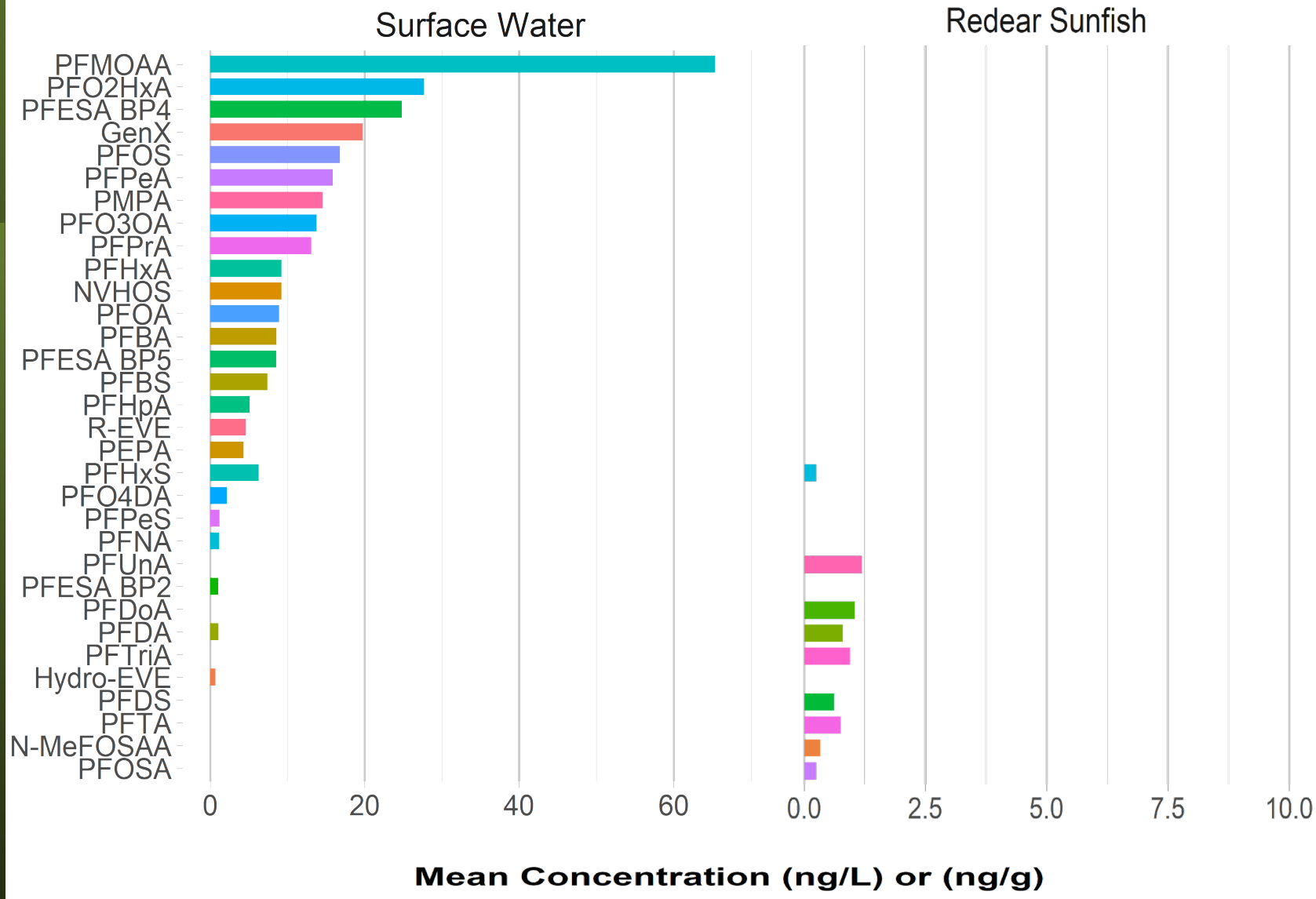


Site 10

Preliminary Data Analysis

American Shad

Site 10



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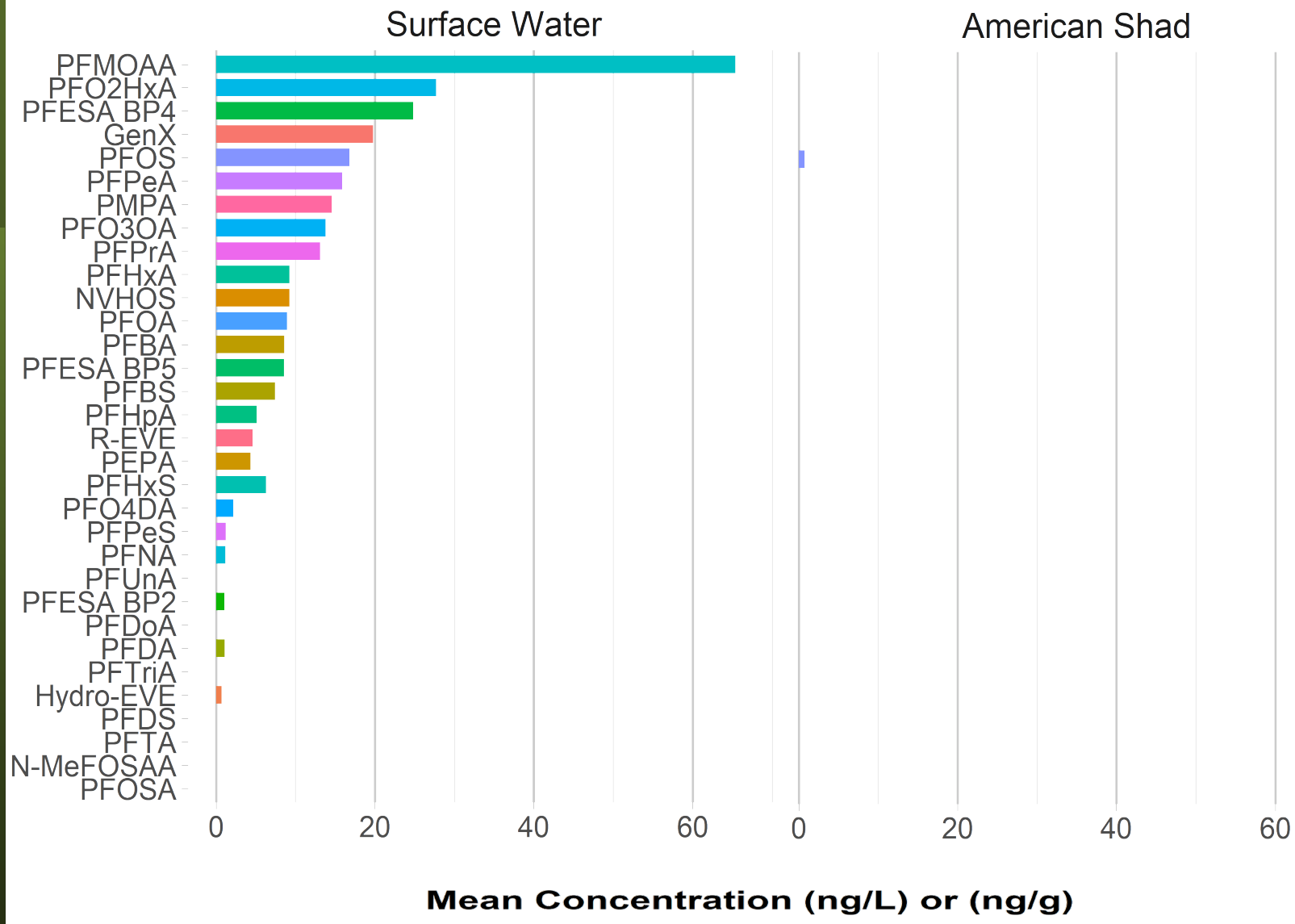
Preliminary Data Analysis

American Shad

Site 10

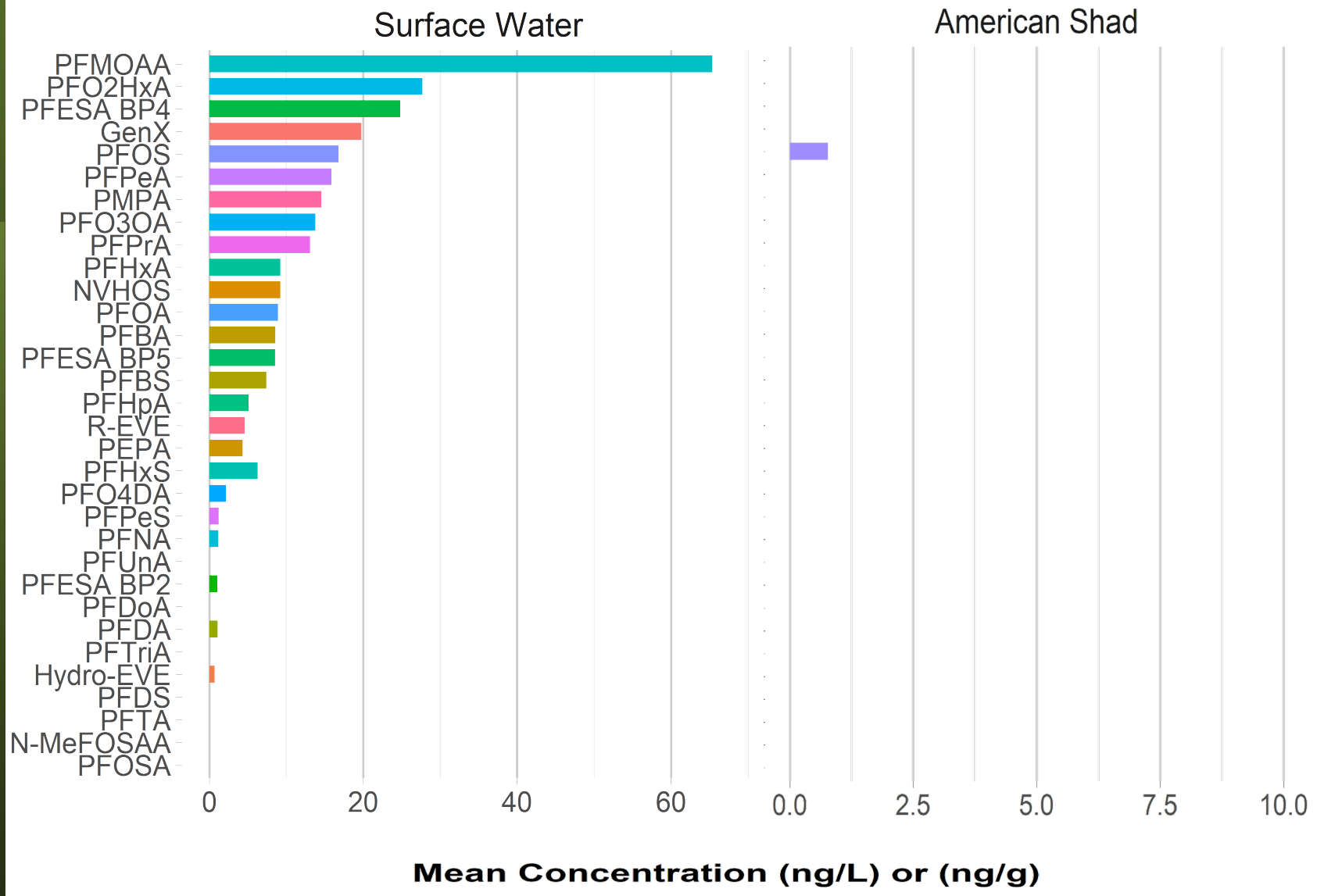


Site 10

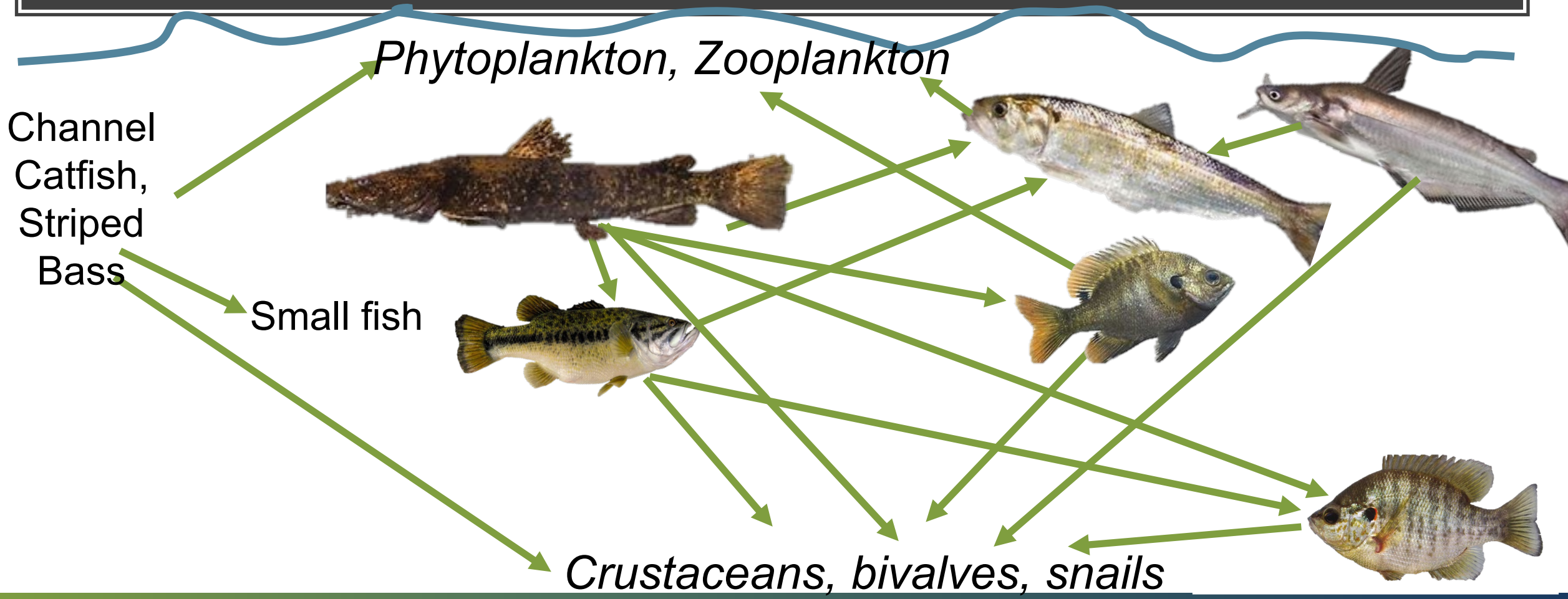
Preliminary Data Analysis

American Shad

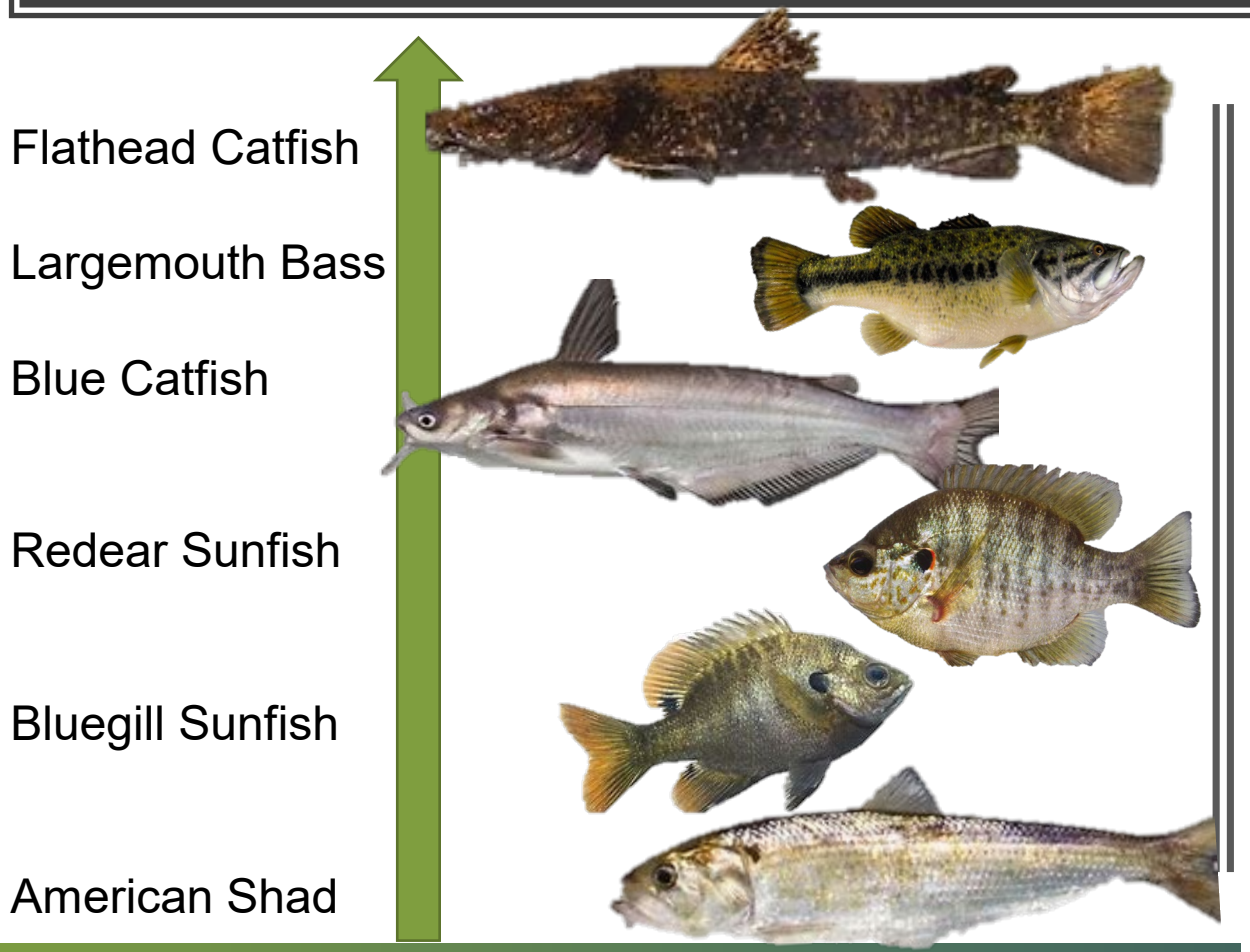
Site 10



Trophic Web Dynamics in the Cape Fear River

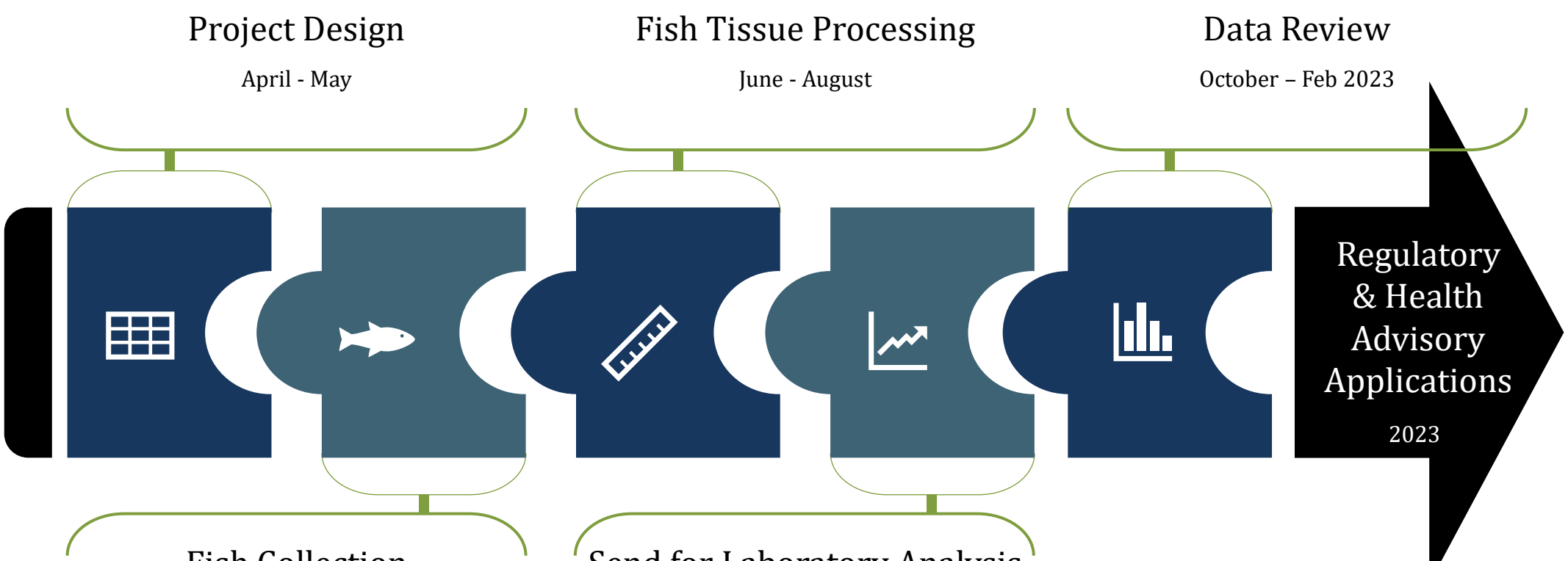


Trophic Web Dynamics in the Cape Fear River



- Increasing trophic position can lead to greater accumulation of contaminants.
- Flathead Catfish could be accumulating PFAS at greater concentrations due to their trophic position.
- Largemouth Bass, Redear and Bluegill Sunfish all have greater mean PFOS concentrations than Flathead catfish at Site 10 .
- Further analysis may elucidate this relationship further.

2022 Fish & Water Collection Event Estimated Timeline



Thank you

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