water

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Supplementary Materials.

Forest-Associated Fishes of the Conterminous United States

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Table S1. List of native freshwater fishes of the conterminous United States (n = 906) including the total number of HUC8s in the distribution of the species, and what percentage of the range is (0-25% forested, 25-50% forested, 25-75% forested, and 25-100% forested).

Species Name	Total Number of HUC8s in Species' Distribution	Percent of Species' Distribution with 0-25% Forested Area	Percent of Species' Distribution with 25-50% Forested Area	Percent of Species' Distribution with 25-75% Forested Area	Percent of Species' Distribution with 25-100% Forested Area
Acantharchus pomotis	91	12	88	57	9
Acipenser brevirostrum	80	19	81	54	10
Acipenser fulvescens	259	38	62	38	15
Acipenser medirostris	77	23	77	58	30
Acipenser oxyrinchus	141	19	81	59	18
Acipenser transmontanus	135	29	71	54	30
Acrocheilus alutaceus	89	36	64	46	16
Agonostomus monticola	34	41	59	35	12
Agosia chrysogaster	34	68	32	9	6
Alosa aestivalis	100	17	83	55	16
Alosa alabamae	72	7	93	74	26
Alosa chrysochloris	220	28	72	50	15
Alosa mediocris	80	23	78	40	3
Alosa pseudoharengus	100	18	82	47	11
Alosa sapidissima	154	12	88	62	16
Ambloplites ariommus	88	3	97	90	39
Ambloplites cavifrons	13	0	100	77	8
Ambloplites constellatus	6	0	100	83	17
Ambloplites rupestris	345	33	67	45	19
Amblyopsis hoosieri	3	0	100	33	0
Amblyopsis spelaea	5	20	80	20	0
Ameiurus brunneus	63	0	100	84	13
Ameiurus catus	178	11	89	61	11
Ameiurus melas	999	57	43	25	9
Ameiurus natalis	1054	42	58	38	12
Ameiurus nebulosus	648	28	72	52	18
Ameiurus platycephalus	65	2	98	86	12
Ameiurus serracanthus	18	0	100	89	22
Amia calva	376	23	77	52	14
Ammocrypta beanii	47	2	98	89	45
Ammocrypta bifascia	14	0	100	93	43
Ammocrypta clara	98	43	57	34	9
Ammocrypta meridiana	19	0	100	95	47
Ammocrypta pellucida	102	36	64	45	20
Ammocrypta vivax	73	11	89	82	41
Anchoa mitchilli	7	14	86	86	57
Anguilla rostrata	659	28	72	49	18
Apeltes quadracus	43	30	70	33	7
Aphredoderus sayanus	402	22	78	54	17
Aplodinotus grunniens	563	44	56	35	11

Archoplites interruptus	34	53	47	26	3
Astyanax mexicanus	32	88	13	3	0
Atractosteus spatula	125	24	76	53	19
Awaous banana	8	50	50	13	0
Campostoma anomalum	598	48	52	31	8
Campostoma oligolepis	137	23	77	54	16
Campostoma ornatum	10	100	0	0	0
Campostoma pauciradii	8	0	100	88	13
Campostoma spadiceum	21	0	100	76	29
Carpiodes carpio	511	57	43	24	7
Carpiodes cyprinus	422	44	56	37	11
Carpiodes sp. cf. cyprinus	2	0	100	100	50
Carpiodes sp. cf. velifer	4	0	100	100	25
Carpiodes velifer	233	38	62	43	14
Catostomus ardens	34	47	53	24	0
Catostomus bernardini	1	100	0	0	0
Catostomus catostomus	242	38	62	50	30
Catostomus clarkii	30	57	43	10	7
Catostomus columbianus	88	47	53	36	14
Catostomus commersonii	805	47	53	35	14
Catostomus discobolus	81	51	49	21	1
Catostomus fumeiventris	2	100	0	0	0
Catostomus insignis	26	54	46	19	15
Catostomus latipinnis	81	62	38	15	1
Catostomus macrocheilus	97	22	78	65	38
Catostomus microps	2	0	100	0	0
Catostomus occidentalis	70	31	69	43	14
Catostomus platyrhynchus	174	53	47	20	5
Catostomus plebeius	17	35	65	29	6
Catostomus rimiculus	15	0	100	87	60
Catostomus santaanae	5	80	20	0	0
Catostomus snyderi	9	0	100	89	44
Catostomus sp. 1	1	100	0	0	0
Catostomus sp. 3	6	50	50	0	0
Catostomus sp. 4	10	10	90	70	30
Catostomus tahoensis	26	81	19	0	0
Catostomus tsiltcoosensis	6	0	100	100	67
Catostomus utawana	6	0	100	100	83
Catostomus warnerensis	2	100	0	0	0
Centrarchus macropterus	259	14	86	64	22
Chasmistes brevirostris	6	0	100	83	33
Chasmistes cujus	2	50	50	0	0
Chasmistes liorus	7	14	86	29	0
Chasmistes muriei	1	0	100	100	0
Chologaster cornuta	53	6	94	70	4
Chrosomus cumberlandensis	8	13	88	88	25
Chrosomus eos	233	42	58	45	27
Chrosomus erythrogaster	238	42	58	31	5
Chrosomus neogaeus	119	29	71	61	42
Chrosomus oreas	26	0	100	96	23
Chrosomus saylori	4	0	100	75	25
Chrosomus sp. 1	1	0	100	100	0
Chrosomus tennesseensis	18	0	100	89	11
Clinostomus elongatus	89	22	78	47	16
Clinostomus funduloides	104	4	96	76	19
Coregonus artedi	88	19	81	57	30
Coregonus clupeaformis	85	9	91	80	51
Coregonus hoyi	26	23	77	58	35
Coregonus hubbsi	1	0	100	100	100
Coregonus kiyi	5	40	60	60	60
Coregonus nipigon	1	0	100	100	100
Coregonus reighardi	3	100	0	0	0
Coregonus zenithicus	7	14	86	86	71
Cottus aleuticus	66	9	91	68	41

Cottus asper	130	25	75	51	25
Cottus asperrimus	1	0	100	100	100
Cottus baileyi	28	0	100	100	46
Cottus bairdii complex	389	28	72	47	16
Cottus beldingii	71	31	69	42	18
Cottus bendirei	3	67	33	33	0
Cottus caeruleomentum	22	5	95	59	18
Cottus carolinae	112	7	93	65	11
Cottus chattahoochee	3	0	100	67	33
Cottus cognatus	163	9	91	78	45
Cottus confusus	75	12	88	71	41
Cottus echinatus	1	0	100	0	0
Cottus extensus	2	0	100	0	0
Cottus girardi	13	8	92	54	31
Cottus greenei	1	100	0	0	0
Cottus gulosus	79	23	77	58	30
Cottus hubbsi	4	0	100	100	50
Cottus hypselurus	8	0	100	75	0
Cottus immaculatus	7	0	100	86	0
Cottus kanawhae	4	0	100	100	50
Cottus klamathensis	12	0	100	83	50
Cottus leiopomus	3	67	33	0	0
Cottus marginatus	6	67	33	33	0
Cottus paulus	1	0	100	100	0
Cottus perplexus	50	0	100	88	60
Cottus pitensis	4	0	100	50	50
Cottus princeps	5	0	100	80	40
Cottus rhotheus	100	7	93	77	51
Cottus ricei	12	8	92	83	25
Cottus schitsuumsh	6	0	100	100	83
Cottus sp. 1	2	0	100	100	0
Cottus sp. 3	1	100	0	0	0
Cottus sp. 4	1	0	100	100	0
Cottus sp. 5	1	0	100	100	0
Cottus sp. 7	2	0	100	0	0
Cottus specus	1	0	100	0	0
Cottus tallapoosae	3	0	100	100	33
Cottus tenuis	6	0	100	83	50
Couesius plumbeus	182	47	53	40	29
Crenichthys baileyi	3	100	0	0	0
Crenichthys nevadae	2	100	0	0	0
Crystallaria asprella	81	21	79	63	25
Crystallaria cincotta	8	0	100	75	25
Ctenogobius claytonii	2	100	0	0	0
Ctenogobius fasciatus	2	50	50	0	0
Ctenogobius pseudofasciatus	4	75	25	0	0
Culaea inconstans	262	50	50	30	16
Cycleptus elongatus	256	51	49	26	3
Cycleptus meridionalis	22	0	100	100	41
Cymatogaster aggregata	47	38	62	40	21
Cyprinella analostana	93	6	94	62	5
Cyprinella caerulea	7	0	100	100	43
Cyprinella callisema	7	0	100	100	14
Cyprinella callistia	26	0	100	100	42
Cyprinella callitaenia	11	0	100	91	18
Cyprinella camura	57	39	61	37	9
Cyprinella chloristia	11	0	100	91	18
Cyprinella formosa	3	100	0	0	0
Cyprinella galactura	43	2	98	79	19
Cyprinella gibbsi	3	0	100	100	33
Cyprinella labrosa	15	0	100	80	20
Cyprinella leedsi	25	0	100	92	12
Cyprinella lepida	7	14	86	43	0
Cyprinella lutrensis	499	67	33	15	4

Cyprinella nivea	36	0	100	89	19
Cyprinella proserpina	9	100	0	0	0
Cyprinella pyrrhomelas	18	0	100	83	17
Cyprinella sp. 1	5	0	100	80	0
Cyprinella sp. 2	1	0	100	100	0
Cyprinella spiloptera	361	35	65	42	13
Cyprinella trichroistia	12	0	100	100	25
Cyprinella venusta	271	20	80	58	23
Cyprinella whipplei	223	30	70	49	15
Cyprinella xaenura	2	0	100	100	0
Cyprinella zanema	14	0	100	86	14
Cyprinodon arcuatus	1	100	0	0	0
Cyprinodon bovinus	2	100	0	0	0
Cyprinodon diabolis	2	100	0	0	0
Cyprinodon elegans	3	100	0	0	0
Cyprinodon eremus	1	100	0	0	0
Cyprinodon eximius	5	100	0	0	0
Cyprinodon macularius	16	100	0	0	0
Cyprinodon nevadensis	2	100	0	0	0
Cyprinodon pecosensis	12	92	8	0	0
Cyprinodon radiosus	2	100	0	0	0
Cyprinodon rubrofluviatilis	29	93	7	0	0
Cyprinodon salinus	1	100	0	0	0
Cyprinodon tularosa	1	100	0	0	0
Cyprinodon variegatus	97	45	55	28	5
Dasyatis sabina	3	33	67	67	33
Deltistes luxatus	6	0	100	83	33
Dionda argentosa	7	100	0	0	0
Dionda diaboli	4	100	0	0	0
Dionda episcopa	36	69	31	11	0
Dionda nigrotaeniata	12	25	75	42	0
Dionda serena	5	20	80	40	0
Dormitator maculatus	47	45	55	28	4
Dorosoma cepedianum	1023	45	55	33	9
Dorosoma petenense	222	23	77	51	17
Elassoma alabamae	2	0	100	0	0
Elassoma boehlkei	7	0	100	100	14
Elassoma evergladei	84	18	82	62	12
Elassoma gilberti	21	5	95	76	24
Elassoma okatie	7	0	100	100	0
Elassoma okefenokee	19	5	95	58	11
Elassoma zonatum	244	13	87	68	27
Eleotris amblyopsis	1	100	0	0	0
Empetrichthys latos	3	67	33	0	0
Empetrichthys merriami	1	100	0	0	0
Enneacanthus chaetodon	63	14	86	51	8
Enneacanthus gloriosus	157	13	87	57	10
Enneacanthus obesus	110	11	89	55	10
Entosphenus folletti	2	0	100	50	50
Entosphenus lethophagus	9	0	100	67	44
Entosphenus minimus	3	0	100	100	33
Entosphenus similis	3	0	100	67	33
Entosphenus tridentatus	204	23	77	55	28
Eremichthys acros	1	100	0	0	0
Erimonax monachus	15	0	100	80	13
Erimystax cahni	5	0	100	80	0
Erimystax dissimilis	52	12	88	60	25
Erimystax harryi	13	0	100	92	8
Erimystax insignis	30	7	93	67	7
Erimystax x-punctatus	81	42	58	38	10
Erimyzon claviformis	248	28	72	51	19
Erimyzon oblongus	179	9	91	64	12
Erimyzon sucetta	324	23	77	52	16
Erimyzon tenuis	40	3	98	93	45

Esox americanus	567	26	74	51	15
Esox lucius	239	54	46	28	12
Esox masquinongy	116	20	80	57	27
Esox niger	392	12	88	68	22
Etheostoma acuticeps	3	0	100	100	0
Etheostoma akatulo	2	0	100	50	0
Etheostoma aquali	3	0	100	67	0
Etheostoma artesiae	80	5	95	89	46
Etheostoma asprigene	106	39	61	34	14
Etheostoma atripinne	4	0	100	25	0
Etheostoma autumnale	12	0	100	92	8
Etheostoma baileyi	7	0	100	100	71
Etheostoma barbouri	3	0	100	0	0
Etheostoma barrenense	2	0	100	50	0
Etheostoma basilare	2	0	100	50	0
Etheostoma bellator	4	0	100	100	25
Etheostoma bellum	2	0	100	0	0
Etheostoma bison	4	0	100	100	0
Etheostoma blennioides	217	23	77	52	15
Etheostoma blennius	8	0	100	63	0
Etheostoma boschungi	4	0	100	25	0
Etheostoma brevirostrum	7	0	100	86	29
Etheostoma brevispinum	11	0	100	82	18
Etheostoma burri	1	0	100	100	0
Etheostoma caeruleum	256	32	68	43	12
Etheostoma camurum	65	23	77	54	18
Etheostoma cervus	2	50	50	0	0
Etheostoma chermocki	1	0	100	100	0
Etheostoma chienense	1	100	0	0	0
Etheostoma chlorobranchium	12	0	100	92	33
Etheostoma chlorosoma	226	24	76	50	22
Etheostoma chuckwachatte	2	0	100	100	50
Etheostoma cinereum	8	0	100	50	0
Etheostoma clinton	2	0	100	100	100
Etheostoma collettei	23	9	91	87	61
Etheostoma collis	20	0	100	90	15
Etheostoma colorosum	11	0	100	100	45
Etheostoma coosae	8	0	100	100	25
Etheostoma corona	1	0	100	0	0
Etheostoma cragini	39	87	13	0	0
Etheostoma crossopterum	14	0	100	36	0
Etheostoma davisoni	10	0	100	100	50
Etheostoma denoncourti	6	0	100	83	0
Etheostoma derivativum	5	20	80	40	0
Etheostoma ditrema	5	0	100	100	20
Etheostoma douglasi	3	0	100	100	0
Etheostoma duryi	13	0	100	62	0
Etheostoma edwini	33	6	94	82	21
Etheostoma erythrozonum	3	0	100	100	0
Etheostoma etnieri	3	0	100	67	0
Etheostoma etowahae	2	0	100	100	0
Etheostoma euzonum	11	0	100	91	9
Etheostoma exile	254	59	41	24	14
Etheostoma flabellare	379	33	67	43	12
Etheostoma flavum	9	11	89	67	0
Etheostoma fonticola	3	0	100	33	0
Etheostoma forbesi	5	0	100	40	0
Etheostoma fragi	1	0	100	100	0
Etheostoma fricksium	12	0	100	100	8
Etheostoma fusiforme	209	13	87	59	13
Etheostoma gore	7	14	86	57	0
Etheostoma gracile	187	26	74	44	18
Etheostoma grahami	9	100	0	0	0
Etheostoma gutselli	4	0	100	100	75

Etheostoma histrio	110	11	89	73	37
Etheostoma hopkinsi	15	0	100	93	20
Etheostoma inscriptum	14	0	100	100	21
Etheostoma jessiae	23	0	100	74	0
Etheostoma jimmycarter	3	0	100	33	0
Etheostoma jordani	11	0	100	100	18
Etheostoma juliae	6	0	100	83	17
Etheostoma kanawhae	1	0	100	100	0
Etheostoma kantuckeense	1	0	100	0	0
Etheostoma kennicotti	34	3	97	59	9
Etheostoma lachneri	14	0	100	93	50
Etheostoma lawrencei	9	0	100	44	11
Etheostoma lemniscatum	1	0	100	100	100
Etheostoma lepidum	24	50	50	29	0
Etheostoma longimanum	5	0	100	100	20
Etheostoma luteovinctum	7	0	100	29	0
Etheostoma lynceum	30	3	97	77	33
Etheostoma maculatum	22	23	77	50	18
Etheostoma mariae	5	0	100	80	0
Etheostoma marmorpinnum	2	0	100	50	0
Etheostoma maydeni	8	25	75	63	13
Etheostoma meadiae	2	0	100	100	0
Etheostoma microlepidum	7	14	86	29	0
Etheostoma microperca	129	55	45	23	9
Etheostoma mihileze	10	30	70	40	0
Etheostoma moorei	1	0	100	100	0
Etheostoma nebra	1	0	100	100	0
Etheostoma neopterum	1	0	100	0	0
Etheostoma nianguae	4	0	100	50	0
Etheostoma nigripinne	9	0	100	44	0
Etheostoma nigrum	544	47	53	35	14
Etheostoma nuchale	2	0	100	100	50
Etheostoma obama	3	0	100	67	0
Etheostoma obeyense	4	0	100	100	25
Etheostoma occidentale	4	25	75	50	0
Etheostoma okaloosae	1	0	100	0	0
Etheostoma olivaceum	4	0	100	50	0
Etheostoma olmstedi	212	8	92	66	17
Etheostoma oophylax	4	0	100	75	0
Etheostoma orientale	4	0	100	100	25
Etheostoma osburni	4	0	100	100	50
Etheostoma pallididorsum	2	0	100	100	100
Etheostoma parvipinne	121	7	93	79	35
Etheostoma percnurum	1	0	100	100	0
Etheostoma perlongum	1	0	100	100	0
Etheostoma phytophilum	2	0	100	100	0
Etheostoma planasaxatile	4	0	100	75	0
Etheostoma podostemone	4	0	100	100	0
Etheostoma proeliare	132	13	87	70	30
Etheostoma pseudovulatum	3	0	100	67	0
Etheostoma punctulatum	12	8	92	50	0
Etheostoma pyrrhogaster	6	17	83	33	0
Etheostoma radiosum	14	0	100	71	36
Etheostoma rafinesquei	2	0	100	0	0
Etheostoma ramseyi	5	0	100	100	40
Etheostoma raneyi	2	0	100	100	0
Etheostoma rubrum	1	0	100	100	100
Etheostoma rufilineatum	41	2	98	71	7
Etheostoma rupestre	24	0	100	100	46
Etheostoma sagitta	9	0	100	100	67
Etheostoma sanguifluum	7	0	100	86	14
Etheostoma scotti	2	0	100	100	50
Etheostoma sellare	7	86	14	0	0
Etheostoma serrifer	51	2	98	73	6

Etheostoma simoterum	28	0	100	75	18
Etheostoma sitikuense	1	0	100	100	0
Etheostoma smithi	7	0	100	43	0
Etheostoma sp. 1	2	0	100	100	0
Etheostoma sp. 10	3	0	100	33	0
Etheostoma sp. 11	4	25	75	50	0
Etheostoma sp. 12	1	0	100	100	0
Etheostoma sp. 13	1	0	100	100	0
Etheostoma sp. 14	2	0	100	100	0
Etheostoma sp. 3	1	0	100	100	100
Etheostoma sp. 5	10	10	90	80	10
Etheostoma sp. 7	3	0	100	100	0
Etheostoma sp. 9	1	0	100	0	0
Etheostoma spectabile	257	66	34	15	2
Etheostoma spilotum	5	0	100	100	80
Etheostoma squamiceps	14	29	71	7	0
Etheostoma stigmaeum	100	6	94	87	40
Etheostoma striatulum	2	0	100	50	0
Etheostoma susanae	2	50	50	50	50
Etheostoma swaini	86	3	97	86	36
Etheostoma swannanoa	9	0	100	89	11
Etheostoma tallapoosae	3	0	100	100	33
Etheostoma tecumsehi	1	0	100	0	0
Etheostoma teddyroosevelt	12	17	83	50	8
Etheostoma tennesseense	19	0	100	79	16
Etheostoma tetrazonum	9	0	100	67	0
Etheostoma thalassinum	10	0	100	90	20
Etheostoma thompsoni	6	0	100	100	67
Etheostoma tippecanoe	33	30	70	48	24
Etheostoma trisella	5	0	100	100	20
Etheostoma tuscumbia	21	29	71	43	5
Etheostoma uniporum	4	0	100	75	0
Etheostoma variatum	56	9	91	70	39
Etheostoma virgatum	3	0	100	100	33
Etheostoma vitreum	31	0	100	65	0
Etheostoma vulneratum	15	0	100	87	27
Etheostoma wapiti	3	0	100	0	0
Etheostoma whipplei	30	23	77	40	3
Etheostoma zonale	220	28	72	51	14
Etheostoma zonifer	14	0	100	100	57
Etheostoma zonistium	6	0	100	50	0
Eucyclogobius newberryi	28	46	54	21	4
Exoglossum laurae	15	20	80	80	47
Exoglossum maxillingua	89	4	96	73	20
Forbesichthys agassizii	14	7	93	21	0
Fundulus albolineatus	1	0	100	0	0
Fundulus bifax	4	0	100	100	50
Fundulus blairae	40	5	95	78	28
Fundulus catenatus	93	9	91	61	12
Fundulus cf. diaphanus	1	0	100	0	0
Fundulus chrysotus	155	21	79	60	19
Fundulus cingulatus	21	10	90	76	29
Fundulus diaphanus	251	31	69	47	19
Fundulus dispar	74	36	64	38	15
Fundulus escambiae	30	3	97	90	30
Fundulus euryzonus	3	0	100	100	0
Fundulus grandis	4	50	50	25	0
Fundulus jenkinsi	29	48	52	38	10
Fundulus julisia	5	0	100	40	0
Fundulus kansae	133	87	13	2	0
Fundulus lineolatus	79	8	92	66	9
Fundulus luciae	19	37	63	16	0
Fundulus notatus	355	41	59	35	12
Fundulus nottii	78	17	83	73	35

Fundulus olivaceus	261	13	87	66	24
Fundulus pulvereus	5	20	80	60	0
Fundulus rathbuni	13	0	100	77	8
Fundulus rubrifrons	20	20	80	30	10
Fundulus sciadicus	83	80	20	10	0
Fundulus seminolis	27	22	78	33	11
Fundulus stellifer	14	0	100	93	29
Fundulus waccamensis	2	0	100	50	0
Fundulus zebrinus	46	70	30	11	0
Gambusia affinis	419	38	62	41	13
Gambusia amistadensis	3	100	0	0	0
Gambusia gaigei	1	100	0	0	0
Gambusia geiseri	4	25	75	50	0
Gambusia georgei	1	0	100	0	0
Gambusia heterochir	1	100	0	0	0
Gambusia holbrooki	176	13	87	63	11
Gambusia krumholzi	2	100	0	0	0
Gambusia nobilis	10	90	10	0	0
Gambusia senilis	1	100	0	0	0
Gambusia speciosa	2	100	0	0	0
Gasterosteus aculeatus	206	30	70	50	28
Gila atraria	50	54	46	14	0
Gila coerulea	6	0	100	83	33
Gila crassicauda	35	51	49	20	3
Gila cypha	21	67	33	0	0
Gila ditaenia	2	100	0	0	0
Gila elegans	40	68	33	8	3
Gila intermedia	19	63	37	11	5
Gila nigra	5	40	60	20	20
Gila nigrescens	1	100	0	0	0
Gila orcuttii	15	80	20	0	0
Gila pandora	28	39	61	21	0
Gila purpurea	2	100	0	0	0
Gila robusta	78	54	46	22	6
Gila seminuda	5	80	20	0	0
Gobiomorus dormitor	8	88	13	0	0
Hemitremia flammea	21	5	95	52	5
Herichthys cyanoguttatus	12	100	0	0	0
Hesperoleucus symmetricus	67	36	64	34	10
Heterandria formosa	81	22	78	54	14
Hiodon alosoides	228	59	41	17	1
Hiodon tergisus	216	28	72	46	12
Hybognathus amarus	33	76	24	9	0
Hybognathus argyritis	127	92	8	2	0
Hybognathus hankinsoni	284	69	31	20	11
Hybognathus hayi	93	16	84	65	30
Hybognathus nuchalis	229	35	65	43	17
Hybognathus placitus	264	84	16	5	0
Hybognathus regius	130	7	93	63	15
Hybopsis amblops	161	22	78	53	13
Hybopsis amnis	107	24	76	49	19
Hybopsis hypsinotus	17	0	100	82	18
Hybopsis lineapunctata	11	0	100	100	36
Hybopsis rubrifrons	16	0	100	94	25
Hybopsis sp. 9	1	0	100	100	0
Hybopsis winchelli	74	0	100	92	39
Hypentelium etowanum	33	0	100	97	42
Hypentelium nigricans	413	26	74	51	15
Hypentelium roanokense	5	0	100	100	0
Hypomesus transpacificus	6	100	0	0	0
Hysterocarpus traskii	41	49	51	27	7
Ichthyomyzon bdellium	59	12	88	68	22
Ichthyomyzon castaneus	186	20	80	55	16
Ichthyomyzon fossor	86	19	81	66	35

Ichthyomyzon gagei	125	2	98	85	34
Ichthyomyzon greeleyi	39	3	97	72	28
Ichthyomyzon unicuspis	113	35	65	40	17
Ictalurus furcatus	302	39	61	36	11
Ictalurus lupus	20	75	25	10	0
Ictalurus pricei	1	100	0	0	0
Ictalurus punctatus	1125	55	45	28	10
Ictalurus sp. 1	3	100	0	0	0
Ictiobus bubalus	412	45	55	35	13
Ictiobus cyprinellus	347	54	46	26	7
Ictiobus niger	273	43	57	32	7
Iotichthys phlegethontis	17	65	35	0	0
Jordanella floridae	29	34	66	24	7
Labidesthes sicculus	502	29	71	49	17
Lampetra aepyptera	146	8	92	66	20
Lampetra ayresii	55	16	84	71	40
Lampetra hubbsi	16	50	50	31	0
Lampetra richardsoni	113	16	84	67	39
Lampetra sp. 1	1	0	100	0	0
Lavinia exilicauda	53	38	62	32	8
Lepidomeda albivallis	1	100	0	0	0
Lepidomeda aliciae	8	25	75	25	0
Lepidomeda altivelis	1	100	0	0	0
Lepidomeda copei	14	86	14	14	0
Lepidomeda mollispinis	3	33	67	0	0
Lepidomeda vittata	6	50	50	0	0
Lepisosteus oculatus	256	21	79	55	19
Lepisosteus osseus	603	30	70	47	14
Lepisosteus platostomus	260	50	50	28	8
Lepisosteus platyrhincus	40	15	85	55	18
Lepomis auritus	264	5	95	72	22
Lepomis cyanellus	782	48	52	33	12
Lepomis gibbosus	494	29	71	50	18
Lepomis gulosus	620	25	75	49	14
Lepomis humilis	559	57	43	24	7
Lepomis macrochirus	879	38	62	41	14
Lepomis marginatus	237	15	85	65	22
Lepomis megalotis	525	32	68	45	15
Lepomis microlophus	398	15	85	57	19
Lepomis miniatus	249	18	82	57	22
Lepomis peltastes	60	42	58	32	5
Lepomis punctatus	99	12	88	70	11
Lepomis symmetricus	106	25	75	55	24
Lepomos peltastes	3	0	100	67	67
Leptocottus armatus	67	31	69	48	24
Leptolucania ommata	34	9	91	68	21
Lethenteron appendix	175	28	72	46	14
Lota lota	207	36	64	43	26
Lucania goodei	41	27	73	37	7
Lucania parva	89	42	58	27	6
Luxilus albeolus	19	0	100	84	11
Luxilus cardinalis	17	59	41	24	0
Luxilus cerasinus	12	0	100	100	17
Luxilus chrysocephalus	365	23	77	54	20
Luxilus coccogenis	30	0	100	80	23
Luxilus cornutus	434	41	59	41	20
Luxilus pilsbryi	15	7	93	53	7
Luxilus zonatus	25	4	96	64	0
Luxilus zonistius	12	0	100	83	33
Lythrurus alegnotus	4	0	100	100	25
Lythrurus ardens	17	0	100	100	18
Lythrurus atrapiculus	14	0	100	100	43
Lythrurus bellus	26	0	100	92	46
Lythrurus fasciolaris	61	10	90	52	8

Lythrurus fumeus	116	21	79	53	22
Lythrurus lirus	28	0	100	79	7
Lythrurus matutinus	5	0	100	40	0
Lythrurus roseipinnis	32	3	97	94	44
Lythrurus snelsoni	4	0	100	100	50
Lythrurus umbratilis	336	46	54	32	11
Macrhybopsis aestivalis	30	73	27	10	3
Macrhybopsis australis	13	85	15	0	0
Macrhybopsis boschungi	11	0	100	100	45
Macrhybopsis etnieri	9	0	100	100	33
Macrhybopsis gelida	105	84	16	6	0
Macrhybopsis hyostoma	247	41	59	39	15
Macrhybopsis marconis	10	20	80	20	0
Macrhybopsis meeki	57	81	19	7	0
Macrhybopsis pallida	11	0	100	91	45
Macrhybopsis storeriana	290	43	57	34	10
Macrhybopsis tetranema	53	77	23	6	0
Macrhybopsis tomellerii	14	0	100	100	50
Margariscus margarita	205	31	69	55	31
Margariscus nachtriebi	34	97	3	3	0
Meda fulgida	13	54	46	15	8
Menidia audens	41	7	93	59	5
Menidia beryllina	146	34	66	35	5
Menidia extensa	1	0	100	100	0
Microgadus tomcod	24	50	50	17	0
Microphis brachyurus	17	53	47	24	0
Micropterus cahabae	1	0	100	100	0
Micropterus cataractae	14	0	100	93	14
Micropterus chattahoochae	3	0	100	67	0
Micropterus coosae	6	0	100	100	33
Micropterus dolomieu	437	38	62	41	16
Micropterus henshalli	32	3	97	94	38
Micropterus notius	9	0	100	100	22
Micropterus punctulatus	365	21	79	54	20
Micropterus salmoides	907	35	65	42	14
Micropterus sp. 1 (Savannah)	9	0	100	100	22
Micropterus sp. 2 (Altamaha)	4	0	100	100	25
Micropterus tallapoosae	3	0	100	100	33
Micropterus treculii	32	34	66	22	0
Micropterus warriorensis	4	0	100	100	25
Minytrema melanops	458	25	75	55	17
Moapa coriacea	1	100	0	0	0
Morone americana	107	20	80	44	13
Morone chrysops	369	41	59	34	11
Morone mississippiensis	136	48	52	29	10
Morone saxatilis	171	11	89	64	16
Moxostoma anisurum	265	33	67	45	14
Moxostoma ariommum	3	0	100	100	0
Moxostoma austrinum	7	100	0	0	0
Moxostoma breviceps	100	15	85	59	20
Moxostoma carinatum	227	22	78	57	18
Moxostoma cervinum	10	0	100	80	0
Moxostoma collapsum	49	0	100	82	10
Moxostoma congestum	22	86	14	5	0
Moxostoma duquesnei	234	20	80	55	16
Moxostoma erythrurum	428	38	62	41	13
Moxostoma hubbsi	2	0	100	0	0
Moxostoma lacerum	9	0	100	44	11
Moxostoma lachneri	9	0	100	78	11
Moxostoma macrolepidotum	274	49	51	33	10
Moxostoma pappillosum	27	0	100	81	4
Moxostoma pisolabrum	90	49	51	32	3
Moxostoma poecilurum	137	11	89	78	35
Moxostoma robustum	19	0	100	89	11

Moxostoma rupiscartes	21	0	100	90	19
Moxostoma sp. 1	10	0	100	90	20
Moxostoma sp. 2	4	0	100	100	50
Moxostoma sp. 3	7	0	100	100	14
Moxostoma sp. 4	34	0	100	88	18
Moxostoma valenciennesi	83	43	57	28	14
Mugil cephalus	27	15	85	67	33
Mylocheilus caurinus	93	23	77	61	34
Mylopharodon conocephalus	54	35	65	41	13
Myoxocephalus thompsonii	29	14	86	62	31
Nocomis asper	18	39	61	33	17
Nocomis biguttatus	273	58	42	21	5
Nocomis effusus	7	14	86	57	14
Nocomis leptocephalus	129	1	99	91	27
Nocomis micropogon	197	17	83	60	19
Nocomis platyrhynchus	5	0	100	100	60
Nocomis raneyi	13	0	100	77	0
Notemigonus crysoleucas	864	32	68	47	15
Notropis albizonatus	8	13	88	50	13
Notropis alborus	14	0	100	93	7
Notropis altipinnis	32	0	100	78	13
Notropis amabilis	42	62	38	14	0
Notropis ammophilus	27	0	100	89	41
Notropis amoenus	79	8	92	62	9
Notropis amplamala	55	0	100	95	44
Notropis anogenus	78	53	47	27	9
Notropis ariommus	31	16	84	61	23
Notropis asperifrons	15	0	100	100	33
Notropis atherinoides	553	42	58	39	14
Notropis atrocaudalis	35	0	100	77	34
Notropis baileyi	29	0	100	97	55
Notropis bairdi	41	63	37	12	5
Notropis bifrenatus	91	9	91	60	18
Notropis blennius	176	57	43	21	5
Notropis boops	132	27	73	48	12
Notropis braytoni	17	100	0	0	0
Notropis buccatus	155	32	68	40	17
Notropis buccula	9	33	67	11	0
Notropis buchanani	239	40	60	33	9
Notropis cahabae	2	0	100	100	0
Notropis candidus	17	0	100	100	47
Notropis chalybaeus	173	18	82	55	14
Notropis chihuahua	6	100	0	0	0
Notropis chiliticus	13	0	100	77	8
Notropis chlorocephalus	3	0	100	67	0
Notropis chrosomus	14	0	100	100	29
Notropis cummingsae	65	2	98	78	15
Notropis dorsalis	232	75	25	11	4
Notropis edwardraneyi	19	0	100	100	53
Notropis girardi	64	72	28	11	0
Notropis greenei	33	3	97	76	6
Notropis harperi	33	0	100	82	27
Notropis heterodon	127	34	66	44	19
Notropis heterolepis	244	41	59	42	22
Notropis hudsonius	305	28	72	50	15
Notropis hypsilepis	9	0	100	78	22
Notropis jemezanus	36	81	19	6	0
Notropis leuciodus	40	0	100	75	15
Notropis longirostris	61	3	97	89	33
Notropis lutipinnis	23	0	100	91	22
Notropis maculatus	164	17	83	63	20
Notropis mekistocholas	3	0	100	100	0
Notropis melanostomus	6	0	100	100	50
Notropis micropteryx	40	3	98	68	13

Notropis nubilus	59	34	66	39	3
Notropis orca	2	100	0	0	0
Notropis ortenburgeri	15	0	100	93	47
Notropis oxyrhynchus	14	57	43	7	0
Notropis ozarcanus	14	0	100	79	7
Notropis percobromus	147	61	39	24	6
Notropis perpallidus	12	0	100	100	67
Notropis petersoni	102	11	89	70	13
Notropis photogenis	115	18	82	59	23
Notropis potteri	43	28	72	35	5
Notropis procne	92	9	91	63	8
Notropis rafinesquei	6	0	100	67	0
Notropis rubellus	192	15	85	61	22
Notropis rubricroceus	18	0	100	89	17
Notropis rupestris	5	0	100	20	0
Notropis sabinae	41	12	88	73	27
Notropis scabriceps	5	0	100	100	60
Notropis scepticus	27	0	100	93	22
Notropis semperasper	2	0	100	100	50
Notropis shumardi	77	35	65	32	4
Notropis simus	15	53	47	13	0
Notropis sp. 1	2	0	100	100	0
Notropis sp. 4	24	4	96	58	8
Notropis spectrunculus	14	0	100	100	36
Notropis stilbius	31	0	100	94	35
Notropis stramineus	585	69	31	17	6
Notropis suttkusi	8	0	100	88	38
Notropis telescopus	58	2	98	74	10
Notropis texanus	200	23	78	61	27
Notropis topeka	75	96	4	0	0
Notropis uranoscopus	4	0	100	100	25
Notropis volucellus	427	23	77	54	23
Notropis wickliffi	22	0	100	73	14
Notropis xaenocephalus	11	0	100	91	27
Noturus albater	7	0	100	86	14
Noturus baileyi	1	0	100	100	0
Noturus crypticus	3	0	100	100	33
Noturus elegans	4	0	100	25	0
Noturus eleutherus	68	21	79	60	16
Noturus exilis	111	46	54	32	3
Noturus fasciatus	4	0	100	75	0
Noturus flavater	11	0	100	91	9
Noturus flavipinnis	7	0	100	86	0
Noturus flavus	416	59	41	22	7
Noturus funebris	58	3	97	88	38
Noturus furiosus	7	0	100	29	0
Noturus gilberti	4	0	100	100	25
Noturus gladiator	15	13	87	47	7
Noturus gyrinus	544	37	63	39	13
Noturus hildebrandi	15	13	87	53	20
Noturus insignis	146	6	94	73	14
Noturus lachneri	3	0	100	100	100
Noturus leptacanthus	114	4	96	92	31
Noturus maydeni	7	0	100	86	0
Noturus miurus	194	28	72	46	16
Noturus munitus	15	0	100	100	33
Noturus nocturnus	220	30	70	52	20
Noturus phaeus	41	10	90	66	32
Noturus placidus	10	70	30	0	0
Noturus sp. 2	6	0	100	83	0
Noturus stanauli	3	0	100	100	0
Noturus stigmosus	40	38	63	35	20
Noturus taylori	3	0	100	100	100
Noturus trautmani	1	100	0	0	0

Novumbra hubbsi	8	0	100	88	63
Oncorhynchus apache	10	40	60	20	10
Oncorhynchus clarkii	357	32	68	44	21
Oncorhynchus gilae	4	50	50	50	25
Oncorhynchus gorbuscha	30	20	80	63	37
Oncorhynchus keta	64	14	86	70	38
Oncorhynchus kisutch	107	15	85	67	36
Oncorhynchus mykiss	282	30	70	52	26
Oncorhynchus nerka	65	23	77	60	28
Oncorhynchus tshawytscha	168	21	79	62	30
Opsopoeodus emiliae	315	24	76	54	20
Oregonichthys crameri	14	0	100	86	50
Oregonichthys kalawatseti	4	0	100	75	75
Orthodon microlepidotus	43	47	53	28	7
Osmerus mordax	41	22	78	61	32
Paralichthys lethostigma	21	67	33	29	19
Perca flavescens	387	32	68	47	18
Percina antesella	3	0	100	100	33
Percina apina	4	0	100	75	0
Percina apristis	4	0	100	25	0
Percina aurantiaca	19	0	100	89	26
Percina aurolineata	3	0	100	100	33
Percina aurora	11	0	100	100	64
Percina austroperca	7	0	100	100	43
Percina bimaculata	5	40	60	0	0
Percina brevicauda	5	0	100	100	40
Percina brucethompsoni	3	0	100	100	100
Percina burtoni	15	0	100	67	7
Percina caprodes	485	34	66	45	16
Percina carbonaria	13	31	69	31	0
Percina copelandi	139	26	74	56	23
Percina crassa	27	0	100	78	11
Percina crypta	7	0	100	86	14
Percina cymatotaenia	5	0	100	80	0
Percina evides	87	15	85	71	22
Percina gymnocephala	4	0	100	100	50
Percina jenkinsi	1	0	100	100	0
Percina kathae	28	0	100	100	43
Percina kusha	3	0	100	100	33
Percina lenticula	27	0	100	100	56
Percina macrocephala	21	5	95	71	33
Percina macrolepida	39	21	79	41	15
Percina maculata	387	39	61	42	17
Percina nasuta	14	7	93	86	7
Percina nevisense	17	0	100	65	0
Percina nigrofasciata	121	2	98	88	29
Percina notogramma	16	0	100	63	6
Percina oxyrhynchus	20	0	100	95	75
Percina palmaris	10	0	100	100	30
Percina pantherina	3	0	100	100	67
Percina peltata	45	7	93	67	13
Percina phoxocephala	203	57	43	23	3
Percina rex	4	0	100	100	0
Percina roanoka	15	0	100	73	0
Percina sciera	240	11	89	65	27
Percina shumardi	182	23	77	54	15
Percina sipsi	1	0	100	100	0
Percina smithvanizi	3	0	100	100	33
Percina squamata	12	0	100	100	50
Percina stictogaster	4	0	100	50	25
Percina suttkusi	27	0	100	100	52
Percina tanasi	14	0	100	71	14
Percina uranidea	16	25	75	69	38
Percina vigil	80	4	96	81	40

Percina williamsi	11	0	100	82	0
Percopsis omiscomaycus	167	38	62	37	16
Percopsis transmontana	27	22	78	59	33
Petromyzon marinus	94	18	82	57	21
Phenacobius catostomus	15	0	100	100	33
Phenacobius crassilabrum	6	0	100	100	33
Phenacobius mirabilis	341	71	29	14	3
Phenacobius teretulus	4	0	100	100	50
Phenacobius uranops	26	4	96	62	0
Pimephales notatus	613	40	60	40	14
Pimephales promelas	735	66	34	19	6
Pimephales tenellus	45	49	51	36	9
Pimephales vigilax	424	35	65	42	14
Plagopterus argentissimus	12	92	8	0	0
Platygobio gracilis	215	83	17	5	0
Poecilia formosa	3	100	0	0	0
Poecilia latipinna	113	35	65	41	9
Poeciliopsis occidentalis	24	79	21	4	0
Poeciliopsis sonoriensis	2	100	0	0	0
Pogonichthys ciscoides	1	0	100	0	0
Pogonichthys macrolepidotus	31	61	39	23	3
Polyodon spathula	297	40	60	39	11
Pomoxis annularis	611	45	55	35	12
Pomoxis nigromaculatus	669	31	69	47	15
Prietella phreatophila	2	100	0	0	0
Prosopium abyssicola	1	0	100	0	0
Prosopium coulterii	25	4	96	80	52
Prosopium cylindraceum	40	3	98	98	68
Prosopium gemmifer	1	0	100	0	0
Prosopium spilonotus	1	0	100	0	0
Prosopium williamsoni	225	30	70	46	21
Pteronotropis euryzonus	2	0	100	100	50
Pteronotropis grandipinnis	10	0	100	90	20
Pteronotropis hubbsi	17	6	94	82	53
Pteronotropis hypselopterus	16	13	88	81	44
Pteronotropis merlini	2	0	100	100	0
Pteronotropis metallicus	23	9	91	52	17
Pteronotropis signipinnis	27	11	89	81	30
Pteronotropis stonei	24	0	100	96	8
Pteronotropis welaka	29	3	97	83	31
Ptychocheilus grandis	57	35	65	39	14
Ptychocheilus lucius	51	67	33	8	0
Ptychocheilus oregonensis	144	25	75	61	34
Ptychocheilus umpquae	6	0	100	83	83
Pungitius pungitius	57	18	82	60	40
Pylodictis olivaris	764	55	45	28	10
Relictus solitarius	2	50	50	0	0
Rhinichthys atratulus	168	2	98	79	33
Rhinichthys cataractae	587	35	65	46	21
Rhinichthys cobitis	12	50	50	33	25
Rhinichthys deaconi	1	100	0	0	0
Rhinichthys evermanni	7	0	100	100	86
Rhinichthys falcatus	34	35	65	38	18
Rhinichthys obtusus	336	38	63	43	18
Rhinichthys osculus	366	40	60	37	17
Rhinichthys sp. 3	1	100	0	0	0
Rhinichthys sp. 4	20	5	95	80	50
Rhinichthys umatilla	8	13	88	75	38
Richardsonius balteatus	207	31	69	49	25
Richardsonius egregius	32	84	16	0	0
Salmo salar	63	2	98	86	60
Salvelinus agassizii	1	0	100	100	100
Salvelinus alpinus	16	0	100	94	75
Salvelinus confluentus	155	20	80	66	35

Salvelinus fontinalis	255	11	89	72	36
Salvelinus malma	21	5	95	81	48
Salvelinus namaycush	96	8	92	82	53
Sander canadensis	285	49	51	30	8
Sander vitreus	471	46	54	38	15
Satan eurystomus	2	50	50	50	0
Scaphirhynchus albus	93	74	26	12	1
Scaphirhynchus platorynchus	178	61	39	16	2
Scaphirhynchus suttkusi	9	0	100	100	56
Semotilus atromaculatus	824	39	61	44	17
Semotilus corporalis	144	6	94	73	32
Semotilus lumbee	10	0	100	90	20
Semotilus thoreauianus	47	0	100	96	40
Siphateles alvordensis	3	100	0	0	0
Siphateles bicolor	68	51	49	28	16
Siphateles boraxobius	1	100	0	0	0
Speoplatyrhinus poulsoni	1	0	100	0	0
Spirinchus thaleichthys	26	35	65	42	15
Strongylura marina	137	34	66	40	12
Syngnathus scovelli	10	30	70	40	20
Thaleichthys pacificus	30	10	90	67	37
Thoburnia atripinnis	3	33	67	0	0
Thoburnia hamiltoni	2	0	100	100	0
Thoburnia rhothoeca	14	0	100	93	21
Thymallus arcticus	28	18	82	54	14
Trinectes maculatus	148	33	67	40	11
Troglichthys rosae	8	25	75	13	0
Trogloglanis pattersoni	2	50	50	50	0
Typhlichthys eigenmanni	8	0	100	100	0
Typhlichthys subterraneus	24	8	92	46	0
Umbra limi	205	42	58	31	14
Umbra pygmaea	103	12	88	54	5
Xyrauchen texanus	60	65	35	10	2