Supplementary Materials

Table S1. Summary of 19 microsatellite loci used in preliminary genetic screenings of 40 individuals from four Walleye populations.

Locus	Size Range (bp)	Number of Alleles	Repeat	$\mathbf{T_m}$ (˚C)	Source
Svi2	190-208	9	$(AC)_{18}$	54	[1]
Svi4	102-118	8	$(AC)_{16}$	62	[2]
Svi5	178-191	NA	$(AC)_{18}$	54	[1]
Svi6	135-169	18	$(AC)_{19}$	60	[1]
Svi7	163-173	NA	$(AC)_{14}$	53	[1]
Svi10	163-253	43	NA	54	[3]
Svi11	308-457	64	NA	5	[3]
Svi16	212-266	18	$(AC)_5n_5(AC)_{30}$	55	[1]
Svi17	101-113	8	$(AC)_{13}$	60	[2]
Svi18	118-126	5	$(AC)_{18}$	58	[2]
Svi20	144-193	18	$(AC)_{20}$	53	[1]
Svi26	156-189	16	$(AC)_{13}n_2(AC)_{19}$	58	[1]
Svi33	90-102	7	$(AC)_{14}$	60	[2]
SviL1	199-237	13	$(GT)_{27}GA(GT)_3TT(GT)_{32}$	53	[4]
SviL2	175-203	11	$(TAA)_{14}$	53	[4]
SviL5	188-224	11	$(CA)_{18}$	55	[4]
SviL6	111-137	9	$(AC)_{17}$	53	[4]
SviL7	195-235	11	$(TG)_{22}$	53	[4]
SviL8	105-145	9	$(TG)_{22}$	53	[4]

[1] Eldridge, W.E.; Bacigalupi, M.D.; Adelman, I.R.; Miller, L.M.; Kapuscinski, A.R. Determination of relative survival of two stocked Walleye populations and resident natural-origin fish by microsatellite DNA parentage assignment. *Canad J Fish Aquat Sci* **2002**, *59*, 282-290.

[2] Borer, S.O.; Miller, L.M.; Kapuscinski, A.R. Microsatellites in walleye *Stizostedion vitreum*. *Molec Ecol* **1999,** *8*(2), 336-338.

[3] Cena, C.J.; Morgan, G.E.; Malette, M.D.; Heath, D.D. 2006. Inbreeding, outbreeding and environmental effects on genetic diversity in 46 Walleye (*Sander vitreus*) populations. *Molec Ecol* **2006**, *15*, 303-320.

[4] Wirth, T.; Saint-Laurent, R; Bernatchez, L. Isolation and characterization of microsatellite loci in the Walleye (*Stizostedion vitreum*), and cross-species amplification within the family Percidae. *Molec Ecol* **1999**, *8*, 1960-1963.

Table S2. PCR protocols for amplification of 8 microsatellite loci used to assess population genetic structure of Walleye.

Master mixes:

Master Mix 1: 22μl PCR solution contained 0.22 U/μl of 5X GoTaq Flexi Promega Buffer, 0.17 U/μl of 25μM of $MgCl_2$, 2.5μM of dNTPs, 5μM concentration of both forward and reverse primer, with 0.01 U/μl of DNA Taq polymerase.

Master Mix 2: 17μl PCR solution contained 0.20 U/μl of 5X GoTaq Flexi Promega Buffer, 0.15 U/μl of 25μM of $MgCl_2$, 2.5μM of dNTPs, 5μM concentration of both forward and reverse primer, with 0.012 U/μl of DNA Taq polymerase.

Master Mix 3: 22μl PCR solution contained 0.15 U/μl of 5X GoTaq Flexi Promega Buffer, 0.20 U/μl of 25μM of $MgCl_2$, 2.5μM of dNTPs, 5μM concentration of both forward and reverse primer, with 0.016 U/μl of DNA Taq polymerase.

PCR protocols:

PCR Protocol 1: 95˚C of initial denaturation for 5 minutes, followed by 10 cycles of 94˚C for 1 minute, 50˚C for 1 minute, and 72˚C for 1 minute. This was followed by 29 cycles of 94˚C for 1 minute, 59˚C for 1 minute, and 72˚C for 1 minute, with a final extension at 72˚C for 10 minutes.

PCR Protocol 2: 94˚C of initial denaturation for 3 minutes, followed by 30 cycles of 94˚C for 1 minute, 57˚C for 1 minute, and 72˚C for 1 minute and 30 seconds, with a final extension at 72˚C for 5 minutes.

PCR Protocol 3: 96˚C of initial denaturation for 3 minutes, followed by 30 cycles of 96˚C for 30 seconds, 53˚C for 30 seconds, and 72˚C for 1 minute, with a final extension at 72˚C for 5 minutes.

PCR Protocol 4: 94˚C of initial denaturation for 2 minutes, followed by 35 cycles of 94˚C for 30 seconds, 48˚C for 1 minute, and 72˚C for 30 seconds, with a final extension at 72˚C for 5 minutes.

Table S3. Frequencies of null alleles in regional assemblages of populations estimated using Microchecker [5]. Because the Mobile Bay drainage and Great Lakes samples had high frequencies of missing data and a reduced number of polymorphic loci, estimation of null allele frequencies could not be completed.

Population	***Svi5***	***Svi6***	***Svi16***	***Svi17***	***Svi18***	***Svi33***	***SviL1***	***SviL7***
Mobile Bay drainage	-	-	-	-	-	-	-	-
Mississippi River	0.08	0.41	014	0326	0.20	0.21	0.09	0.07
Tennessee River	0.06	0.14	0.11	0.25	0.32	0.26	0.26	0.29
New River	-	0.23	0.10	0.16	-	0.08	0.17	0.13
Ohio River	0.04	0.16	0.05	0.29	0.05	0.24	0.26	0.19
Great Lakes	-	-	-	-	-	-	-	-

[5] Van Oosterhout, C.; Hutchinson, W.F.; Willis, D.P.M.; Shipley, P. MICRO-CHECKER: software for identifying and correcting genotyping errors in microsatellite data. *Molec Ecol Notes* **2004**, *4*, 535-538.

Table S4. Full locus-by-locus genetic diversity indices for each population of Walleye.

Population	*N*	Gene Copies	Alleles	H_o	H_e	Allele Range	*M*
Mobile Bay drainage							
Coosa drainage, AL	*Svi17*	30	3	0.00	0.54	4	0.60
	Svi33	30	2	0.00	0.50	2	0.66
	Svi18	30	5	0.93	0.72	16	0.29
	SviL1	30	2	0.33	0.29	6	0.29
Tombigbee drainage, AL	*Svi6*	88	2	0.00	0.51	144	0.01
	Svi5	88	3	0.00	0.62	142	0.02
	Svi17	88	4	0.00	0.47	103	0.04
	Svi33	88	4	0.00	0.45	6	0.57
	Svi18	88	6	1.00	0.63	14	0.40
	SviL1	88	4	0.39	0.61	16	0.24
Mississippi River drainage							
Fellows Lake, MO	*Svi6*	18	5	0.78	0.80	8	0.56
	Svi5	18	10	0.89	0.93	42	0.23
	SviL7	18	6	0.44	0.81	10	0.55
	Svi16	18	8	0.67	0.89	20	0.38
	Svi17	18	4	0.22	0.76	103	0.04
	Svi33	18	3	0.89	0.63	83	0.04
	SviL1	18	9	0.67	0.91	179	0.05
Stockton Lake, MO	*Svi6*	42	7	0.43	0.79	146	0.05
	Svi5	42	13	0.81	0.92	186	0.07
	SviL7	42	9	0.24	0.84	239	0.04
	Svi16	42	13	0.57	0.86	205	0.06
	Svi17	42	7	0.71	0.81	109	0.06
	Svi33	42	5	0.48	0.89	85	0.06
	Svi18	42	4	0.00	0.52	120	0.03
	SviL1	42	9	0.29	0.61	181	0.05
Beaver/Table Rock Lake, AK/MO	*Svi6*	40	6	0.05	0.76	10	0.55
	Svi5	40	12	0.90	0.90	24	0.48
	SviL7	40	8	0.85	0.86	14	0.53
	Svi16	40	13	0.70	0.92	201	0.06
	Svi17	40	7	0.60	0.82	108	0.06
	Svi33	40	6	0.25	0.76	87	0.07
	Svi18	40	6	0.05	0.71	10	0.55
James/Table Rock Lake, MO	*Svi6*	40	6	0.10	0.59	12	0.46
	Svi5	40	8	0.50	0.82	18	0.42
	SviL7	40	9	0.85	0.83	229	0.04
	Svi16	40	10	0.40	0.85	199	0.05
	Svi17	40	6	0.35	0.81	107	0.06
	Svi33	40	7	0.15	0.79	95	0.07
	Svi18	40	7	0.40	0.79	122	0.06
Mozingo Lake, MO	*Svi6*	38	3	0.00	0.65	4	0.60

	Svi5	38	10	0.68	0.84	18	0.53
	SviL7	38	7	0.85	0.85	12	0.54
	Svi16	38	10	0.32	0.82	199	0.05
	Svi17	38	5	0.42	0.77	10	0.45
	Svi33	38	8	0.47	0.85	95	0.08
	Svi18	38	8	0.32	0.80	122	0.07
	SviL1	38	3	0.05	0.10	159	0.02
Smithville Lake, MO	*Svi6*	32	5	0.00	0.71	8	0.56
	Svi5	32	12	0.75	0.88	22	0.52
	SviL7	32	8	0.94	0.87	14	0.53
	Svi16	32	14	0.63	0.92	32	0.42
	Svi17	32	5	0.44	0.81	105	0.05
	Svi33	32	8	0.56	0.80	95	0.08
	Svi18	32	6	0.25	0.76	12	0.46
Current River, MO	*Svi6*	56	5	0.00	0.74	8	0.56
	Svi5	56	8	0.21	0.48	158	0.05
	SviL7	56	2	0.00	0.07	225	0.01
	Svi17	56	3	0.00	0.57	101	0.03
	Svi33	56	5	0.04	0.58	83	0.06
	Svi18	56	6	0.75	0.81	10	0.55
	SviL1	56	13	0.61	0.91	205	0.06
Black River, AK	*Svi6*	52	6	0.00	0.70	12	0.46
	Svi5	52	9	0.31	0.51	156	0.06
	SviL7	52	5	0.08	0.22	239	0.02
	Svi17	52	2	0.00	0.48	2	0.67
	Svi33	52	6	0.15	0.63	87	0.07
	Svi18	52	8	0.96	0.48	14	0.53
	SviL1	52	15	0.73	0.92	203	0.07
Tennessee River drainage							
Clinch and Powell Rivers, VA	*Svi6*	158	11	0.57	0.79	152	0.07
	Svi5	158	15	0.56	0.80	174	0.09
	SviL7	158	14	0.16	0.77	259	0.05
	Svi16	158	13	0.24	0.78	215	0.06
	Svi17	158	4	0.13	0.47	6	0.57
	Svi33	158	10	0.37	0.84	95	0.10
	Svi18	158	11	0.27	0.72	142	0.08
	SviL1	158	20	0.41	0.90	203	0.10
Lake Fontana, NC	*Svi6*	84	11	0.38	0.87	150	0.07
	Svi5	84	15	0.83	0.92	28	0.52
	SviL7	84	18	0.40	0.90	38	0.46
	Svi16	84	9	0.17	0.45	211	0.04
	Svi17	84	6	0.29	0.82	107	0.06
	Svi33	84	8	0.48	0.82	95	0.08
	Svi18	84	10	0.02	0.83	138	0.07
	SviL1	84	9	0.07	0.41	191	0.05

Nantahala Lake, NC	*Svi6*	54	8	0.41	0.82	14	0.53
	Svi5	54	12	0.78	0.89	26	0.44
	SviL7	54	13	0.41	0.83	36	0.35
	Svi17	54	5	0.15	0.80	105	0.05
	Svi33	54	5	0.07	0.46	87	0.06
	Svi18	54	7	0.00	0.76	134	0.05
Lake Santeetlah, NC	*Svi6*	36	9	0.56	0.89	18	0.47
	Svi5	36	11	0.50	0.91	172	0.06
	SviL7	36	14	0.61	0.93	261	0.05
	Svi17	36	5	0.56	0.73	105	0.05
	Svi33	36	5	0.28	0.63	95	0.05
	Svi18	36	6	0.06	0.82	128	0.05
Bear Lake, NC	*Svi6*	48	6	0.50	0.78	12	0.46
	Svi5	48	12	0.54	0.88	24	0.48
	SviL7	48	13	0.50	0.81	28	0.45
	Svi17	48	5	0.29	0.77	8	0.56
	Svi33	48	7	0.38	0.81	95	0.07
	Svi18	48	4	0.00	0.67	6	0.57
Wolf Lake, NC	*Svi6*	32	6	0.81	0.78	10	0.55
	Svi5	32	11	0.81	0.91	164	0.07
	SviL7	32	8	0.31	0.83	239	0.03
	Svi16	32	5	0.19	0.34	263	0.02
	Svi17	32	4	0.81	0.74	6	0.57
	Svi33	32	6	0.25	0.79	95	0.06
	Svi18	32	4	0.19	0.68	10	0.36
Lake James, NC	*Svi6*	100	8	0.54	0.83	14	0.53
	Svi5	100	15	0.86	0.91	30	0.48
	SviL7	100	15	0.36	0.88	34	0.43
	Svi16	100	15	0.98	0.88	277	0.05
	Svi17	100	5	0.48	0.68	105	0.05
	Svi33	100	6	0.26	0.78	87	0.07
	Svi18	100	10	0.36	0.84	18	0.53
Lake Hiwassee, NC	*Svi6*	32	7	0.50	0.81	12	0.54
	Svi5	32	9	0.81	0.86	18	0.47
	SviL7	32	7	0.19	0.79	24	0.28
	Svi17	32	4	0.31	0.72	103	0.04
	Svi33	32	4	0.19	0.55	85	0.05
	Svi18	32	7	0.94	0.85	128	0.05
Lake Glenville, NC	*Svi6*	48	8	0.53	0.86	14	0.53
	Svi5	48	11	0.75	0.91	20	0.52
	SviL7	48	11	0.25	0.88	255	0.04
	Svi16	48	4	0.13	0.23	269	0.01
	Svi17	48	5	0.42	0.75	8	0.56
	Svi33	48	6	0.38	0.76	89	0.07
	Svi18	48	10	1.00	0.90	18	0.53
New River, VA	*Svi6*	234	10	0.44	0.86	18	0.53

	Svi5	234	14	0.97	0.89	26	0.52
	SviL7	234	23	0.89	0.94	263	0.09
	Svi16	234	16	0.88	089	283	0.06
	Svi17	234	2	0.02	0.02	2	0.67
	Svi33	234	6	0.10	0.63	20	0.29
	Svi18	234	10	1.00	0.88	20	0.78
Ohio River drainage							
Barren River, KY	*Svi6*	140	11	0.24	0.82	148	0.07
	Svi5	140	19	0.83	0.92	40	0.46
	SviL7	140	17	0.67	0.91	36	0.46
	Svi16	140	13	0.69	0.79	273	0.05
	Svi17	140	5	0.07	0.62	105	0.05
	Svi33	140	7	0.41	0.79	95	0.07
	Svi18	140	11	0.67	0.83	136	0.08
	SviL1	140	11	0.04	0.53	175	0.06
Goose Creek, KY	*Svi6*	54	6	0.15	0.67	10	0.55
	Svi5	54	12	0.93	0.88	32	0.36
	SviL7	54	13	0.70	0.86	257	0.05
	Svi16	54	9	0.56	0.77	263	0.03
	Svi17	54	4	0.00	0.59	103	0.04
	Svi33	54	5	0.19	0.52	83	0.06
	Svi18	54	7	1.00	0.82	12	0.54
Rockcastle River, KY	*Svi6*	88	8	0.45	0.77	164	0.05
	Svi5	88	15	0.93	0.90	46	0.32
	SviL7	88	12	0.30	0.90	34	0.34
	Svi16	88	8	0.52	0.78	189	0.04
	Svi17	88	4	0.05	0.40	103	0.04
	Svi33	88	7	0.30	0.66	20	0.33
	Svi18	88	3	0.00	0.13	128	0.02
	SviL1	88	11	0.50	0.88	20	0.52
Levisa and Russell Forks, KY	*Svi6*	30	6	0.53	0.74	142	0.04
	Svi5	30	12	0.93	0.90	44	0.27
	SviL7	30	7	0.13	0.83	12	0.54
	Svi16	30	10	0.53	0.77	203	0.05
	Svi17	30	4	0.53	0.73	6	0.57
	Svi33	30	7	0.67	0.79	20	0.33
	SviL1	30	12	0.53	0.92	24	0.48
Allegheny River, PA	*Svi6*	42	6	0.90	0.79	144	0.04
	Svi5	42	10	0.57	0.88	18	0.53
	SviL7	42	12	0.95	0.90	30	0.49
	Svi16	42	6	0.29	0.82	10	0.55
	Svi17	42	3	0.33	0.36	4	0.60
	Svi33	42	9	0.33	0.85	20	0.43
	Svi18	42	4	0.05	0.70	6	0.57
	SviL1	42	11	0.52	0.90	24	0.44
Great Lakes watersheds							

Lake Erie	*Svi6*	52	5	0.19	0.65	8	0.56
	Svi5	52	7	0.65	0.80	16	0.41
	SviL7	52	8	0.50	0.84	26	0.30
	Svi16	52	6	1.00	0.79	10	0.55
	Svi17	52	2	0.04	0.04	2	0.67
	Svi33	52	5	0.35	0.78	14	0.33
	Svi18	52	6	1.00	0.79	10	0.55
Lake Ontario	*Svi6*	38	7	0.16	0.82	12	0.54
	Svi5	38	12	0.79	0.92	22	0.52
	SviL7	38	10	0.37	0.88	24	0.40
	Svi16	38	11	0.63	0.83	273	0.04
	Svi17	38	4	0.58	0.72	103	0.04
	Svi33	38	5	0.37	0.79	87	0.06
	Svi18	38	9	0.95	0.89	16	0.53
Mille Lacs, MN	*Svi6*	40	5	0.05	0.72	8	0.56
	Svi5	40	8	0.65	0.85	14	0.53
	SviL7	40	8	0.30	0.82	14	0.53
	Svi17	40	6	0.10	0.74	113	0.05
	Svi33	40	5	0.40	0.69	85	0.06
	Svi18	40	6	1.00	0.83	12	0.46
Lake Michigan	*Svi6*	40	5	0.10	0.64	10	0.45
	Svi5	40	9	0.80	0.77	16	0.53
	SviL7	40	7	0.20	0.71	12	0.54
	Svi16	40	5	0.20	0.36	261	0.20
	Svi17	40	4	0.40	0.73	103	0.04
	Svi33	40	6	0.35	0.77	87	0.07
	Svi18	40	7	1.00	0.78	12	0.54
Grand River, MI	*Svi6*	26	4	0.08	0.72	6	0.57
	Svi5	26	6	0.15	0.68	156	0.04
	SviL7	26	6	0.08	0.81	237	0.03
	Svi16	26	5	0.23	0.41	265	0.02
	Svi17	26	4	0.38	0.68	103	0.04
	Svi33	26	7	0.38	0.86	89	0.08
	Svi18	26	7	0.62	0.78	12	0.54
Flint River, MI	*Svi6*	40	7	0.80	0.85	12	0.54
	Svi5	40	11	0.75	0.88	22	0.48
	SviL7	40	10	0.45	0.87	22	0.43
	Svi16	40	8	0.95	0.81	273	0.03
	Svi17	40	5	0.15	0.77	105	0.05
	Svi33	40	5	0.30	0.80	858	0.06
	Svi18	40	8	0.95	0.84	14	0.53
St. Mary's River, MI	*Svi6*	38	9	0.32	0.81	16	0.53
	Svi5	38	12	0.84	0.91	24	0.48
	SviL7	38	6	0.37	0.83	14	0.40
	Svi16	38	8	0.37	0.59	273	0.03
	Svi17	38	5	0.11	0.72	105	0.05

	Svi33	38	7	0.26	0.81	89	0.08
	Svi18	38	9	1.00	0.86	16	0.53
Thunder Bay, Ontario	*Svi6*	12	5	0.17	0.80	10	0.45
	Svi5	12	7	1.00	0.89	18	0.37
	SviL7	12	5	0.67	0.79	233	0.02
	Svi17	12	3	0.00	0.55	101	0.03
	Svi33	12	3	0.17	0.62	83	0.04
	Svi18	12	7	1.00	0.91	12	0.54
Saginaw Bay, MI	*Svi6*	20	4	0.10	0.50	6	0.57
	Svi5	20	7	0.80	0.81	18	0.37
	SviL7	20	5	1.00	0.81	12	0.38
	Svi16	20	6	0.40	0.64	265	0.02
	Svi17	20	3	0.20	0.48	103	0.03
	Svi33	20	6	0.20	0.83	85	0.07
	Svi18	20	6	1.00	0.79	10	0.55
Oneida Lake, NY	*Svi6*	20	3	0.20	0.48	8	0.33
	Svi5	20	5	0.90	0.81	14	0.33
	SviL7	20	4	0.40	0.65	8	0.44
	Svi17	20	3	0.40	0.58	105	0.03
	Svi33	20	4	0.40	0.72	85	0.05
	Svi18	20	5	1.00	0.81	10	0.45
Lake Manitoba, Manitoba	*Svi6*	34	4	0.00	0.69	6	0.57
	Svi5	34	8	0.59	0.84	16	0.47
	SviL7	34	10	0.76	0.89	26	0.37
	Svi16	34	8	0.41	0.64	265	0.03
	Svi17	34	4	0.12	0.70	103	0.04
	Svi33	34	5	0.41	0.76	87	0.06
	Svi18	34	7	1.00	0.85	12	0.54
Lake Winnipeg, Manitoba	*Svi6*	38	8	0.16	0.83	16	0.47
	Svi5	38	16	1.00	0.93	36	0.43
	SviL7	38	10	0.63	0.86	20	0.48
	Svi16	38	8	0.42	0.65	267	0.03
	Svi17	38	4	0.11	0.59	103	0.04
	Svi33	38	5	0.26	0.64	85	0.06
	Svi18	38	10	1.00	0.89	18	0.53
Lac Mistassini, Quebec	*Svi6*	40	6	0.10	0.78	10	0.55
	Svi5	40	14	0.95	0.94	38	0.36
	SviL7	40	10	0.65	0.85	245	0.04
	Svi16	40	8	0.55	0.76	273	0.03
	Svi17	40	4	0.05	0.75	103	0.04
	Svi33	40	3	0.35	0.64	83	0.04
	Svi18	40	9	0.95	0.89	16	0.53

Table S5. F_{ST} values among populations of Walleye. Populations are (1) Hatchet Creek, Coosa Drainage, AL, (2) John Allen Fish Hatchery, Tombigbee drainage, AL, (3) Fellows Lake, MO, (4) Stockton Lake, MO, (5) Beaver/Table Rock Lake, AK/MO, (6) James/Table Rock Lake, MO, (7) Mozingo Lake, MO, (8) Smithville Lake, MO, (9) Current River, MO, (10) Black River, AK, (11) Clinch and Powell Rivers, VA, (12) Lake Fontana, NC, (13) Nantahala Lake, NC, (14) Lake Santeetlah, NC, (15) Bear Lake, NC, (16) Wolf Lake, NC, (17) Lake James, NC, (18) Lake Hiwassee, NC, (19) Lake Glenville, NC, (20) New River, VA, (21) Barren River, KY, (22) Goose Creek, KY, (23) Rockcastle River, KY (24) Levisa and Russell Forks, KY, (25) Allegheny River, PA, (26) Lake Erie, (27) Lake Ontario, (28) Mille Lacs, MN, (29) Lake Michigan, (30) Grand River, MI, (31) Flint River, MI, (32) St. Mary's River, MI, (33) Thunder Bay, ON, (34) Saginaw Bay, MI, (35) Oneida Lake, NY, (36) Lake Manitoba, MB, (37) Lake Winnipeg, MB, and (38) Lac Mistassini, QC.

	1	2	3	4	5	6	7	8	9	10	11	12
1	0.0											
2	0.191	0.0										
3	0.517	0.444	0.0									
4	0.400	0.355	0.062	0.0								
5	0.468	0.434	0.201	0.136	0.0							
6	0.463	0.409	0.225	0.148	0.069	0.0						
7	0.459	0.413	0.219	0.143	0.041	0.051	0.0					
8	0.493	0.447	0.202	0.143	0.026	0.056	0.022	0.0				
9	0.329	0.274	0.357	0.263	0.306	0.250	0.280	0.314	0.0			
10	0.292	0.222	0.351	0.260	0.311	0.280	0.279	0.328	0.049	0.0		
11	0.189	0.159	0.199	0.143	0.211	0.204	0.204	0.214	0.171	0.151	0.0	
12	0.346	0.306	0.154	0.080	0.120	0.110	0.100	0.127	0.218	0.221	0.128	0.0
13	0.482	0.421	0.259	0.160	0.216	0.204	0.192	0.203	0.300	0.321	0.208	0.064
14	0.458	0.405	0.264	0.147	0.192	0.172	0.160	0.191	0.260	0.273	0.196	0.079
15	0.474	0.418	0.272	0.161	0.157	0.162	0.143	0.175	0.264	0.271	0.224	0.087
16	0.472	0.426	0.252	0.148	0.131	0.144	0.126	0.144	0.258	0.273	0.212	0.089
17	0.418	0.397	0.176	0.100	0.102	0.127	0.126	0.110	0.288	0.299	0.191	0.097
18	0.492	0.430	0.256	0.132	0.173	0.169	0.165	0.197	0.265	0.299	0.211	0.066
19	0.423	0.365	0.227	0.108	0.152	0.137	0.130	0.149	0.255	0.365	0.168	0.035
20	0.435	0.359	0.242	0.146	0.190	0.178	0.195	0.167	0.310	0.306	0.170	0.142
21	0.323	0.273	0.111	0.053	0.134	0.123	0.126	0.125	0.219	0.214	0.104	0.049
22	0.444	0.386	0.218	0.131	0.157	0.184	0.188	0.180	0.316	0.307	0.202	0.119
23	0.378	0.327	0.094	0.104	0.264	0.255	0.251	0.256	0.304	0.282	0.141	0.167
24	0.415	0.366	0.084	0.077	0.244	0.243	0.224	0.242	0.311	0.290	0.143	0.145
25	0.413	0.350	0.172	0.147	0.219	0.226	0.222	0.208	0.301	0.280	0.077	0.166
26	0.526	0.451	0.271	0.170	0.202	0.207	0.230	0.188	0.363	0.362	0.210	0.190
27	0.422	0.370	0.171	0.080	0.113	0.123	0.120	0.118	0.277	0.272	0.150	0.059
28	0.456	0.374	0.245	0.116	0.185	0.182	0.180	0.196	0.278	0.277	0.181	0.083
29	0.471	0.406	0.233	0.114	0.172	0.179	0.178	0.180	0.294	0.305	0.200	0.098
30	0.389	0.334	0.243	0.117	0.179	0.170	0.170	0.185	0.204	0.212	0.123	0.085

31	0.457	0.415	0.174	0.106	0.111	0.140	0.140	0.119	0.315	0.317	0.174	0.090
32	0.441	0.383	0.201	0.108	0.142	0.131	0.137	0.136	0.264	0.283	0.160	0.043
33	0.543	0.420	0.220	0.128	0.180	0.166	0.184	0.176	0.272	0.297	0.205	0.087
34	0.534	0.464	0.228	0.143	0.164	0.189	0.186	0.178	0.324	0.348	0.229	0.115
35	0.560	0.456	0.280	0.170	0.225	0.227	0.225	0.233	0.355	0.360	0.252	0.119
36	0.457	0.394	0.197	0.099	0.152	0.146	0.157	0.149	0.283	0.288	0.171	0.064
37	0.424	0.372	0.189	0.096	0.139	0.152	0.140	0.148	0.287	0.281	0.169	0.066
38	0.400	0.332	0.182	0.091	0.129	0.128	0.133	0.135	0.249	0.249	0.150	0.073

	13	14	15	16	17	18	19	20	21	22	23	24	25
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13	0.0												
14	0.130	0.0											
15	0.145	0.079	0.0										
16	0.154	0.073	0.014	0.0									
17	0.160	0.129	0.143	0.113	0.0								
18	0.112	0.100	0.088	0.094	0.113	0.0							
19	0.072	0.061	0.079	0.081	0.079	0.059	0.0						
20	0.189	0.200	0.209	0.214	0.128	0.214	0.131	0.0					
21	0.115	0.101	0.116	0.116	0.088	0.105	0.073	0.082	0.0				
22	0.191	0.166	0.169	0.169	0.127	0.139	0.138	0.164	0.093	0.0			
23	0.254	0.258	0.276	0.282	0.247	0.271	0.231	0.213	0.096	0.256	0.0		
24	0.256	0.244	0.269	0.261	0.227	0.258	0.217	0.237	0.093	0.262	0.020	0.0	
25	0.250	0.247	0.279	0.253	0.186	0.261	0.197	0.150	0.120	0.226	0.146	0.162	0.0
26	0.271	0.236	0.230	0.232	0.167	0.251	0.197	0.083	0.116	0.163	0.150	0.267	0.203
27	0.119	0.076	0.113	0.098	0.025	0.082	0.033	0.097	0.050	0.092	0.214	0.205	0.150
28	0.116	0.110	0.103	0.122	0.137	0.060	0.058	0.143	0.075	0.086	0.229	0.231	0.218
29	0.143	0.126	0.111	0.120	0.116	0.053	0.068	0.155	0.084	0.090	0.239	0.236	0.225
30	0.139	0.103	0.140	0.124	0.108	0.092	0.056	0.146	0.080	0.136	0.243	0.237	0.196
31	0.140	0.149	0.183	0.154	0.027	0.140	0.091	0.101	0.083	0.106	0.238	0.227	0.154
32	0.081	0.086	0.115	0.096	0.073	0.069	0.030	0.112	0.058	0.102	0.228	0.221	0.180
33	0.088	0.128	0.106	0.115	0.148	0.091	0.087	0.173	0.091	0.084	0.251	0.257	0.239
34	0.175	0.153	0.157	0.143	0.121	0.087	0.126	0.206	0.106	0.058	0.280	0.271	0.257
35	0.186	0.178	0.165	0.153	0.176	0.106	0.114	0.238	0.131	0.088	0.299	0.294	0.290
36	0.109	0.096	0.111	0.108	0.075	0.071	0.046	0.116	0.048	0.059	0.219	0.225	0.181

37	0.108	0.102	0.126	0.116	0.054	0.088	0.034	0.144	0.073	0.119	0.235	0.224	0.190
38	0.123	0.114	0.144	0.126	0.053	0.101	0.051	0.111	0.068	0.101	0.226	0.219	0.171

	26	27	28	29	30	31	32	33	34	35	36	37	38
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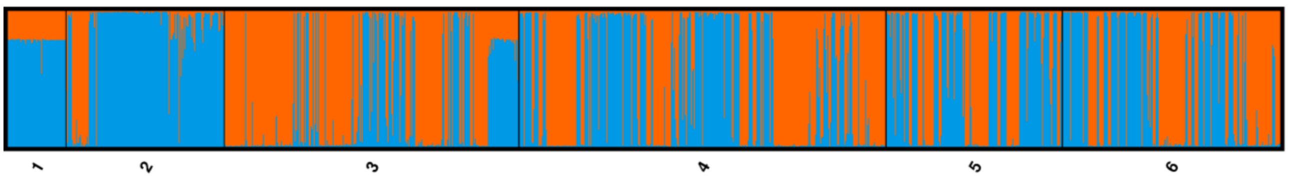
25													
26	0.0												
27	0.152	0.0											
28	0.178	0.084	0.0										
29	0.158	0.081	0.013	0.0									
30	0.208	0.060	0.071	0.097	0.0								
31	0.170	0.021	0.136	0.132	0.112	0.0							
32	0.183	0.032	0.071	0.099	0.053	0.056	0.0						
33	0.210	0.099	0.048	0.076	0.112	0.125	0.051	0.0					
34	0.213	0.098	0.101	0.085	0.132	0.120	0.071	0.063	0.0				
35	0.262	0.141	0.061	0.062	0.151	0.178	0.112	0.081	0.050	0.0			
36	0.152	0.036	0.048	0.057	0.061	0.071	0.016	0.050	0.054	0.078	0.0		
37	0.215	0.008	0.045	0.101	0.065	0.065	0.049	0.103	0.131	0.158	0.066	0.0	
38	0.191	0.006	0.092	0.109	0.057	0.039	0.039	0.087	0.117	0.155	0.059	0.007	0.0

K = 2



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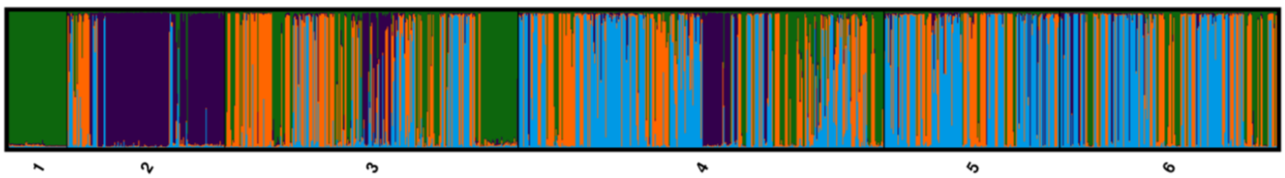

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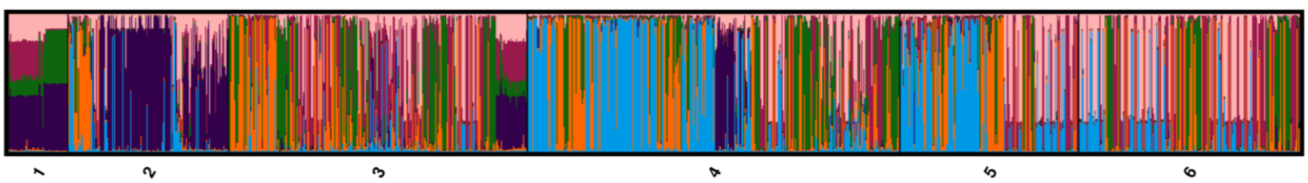

Figure S1. Structure plots representative of population genetic structuring of Walleye populations grouped within watersheds at different levels of *K*. The watersheds are designated: (1) Mobile Bay drainage, (2) Mississippi River, (3) Tennessee River, (4) New River, (5) Ohio River, and (6) Great Lakes.

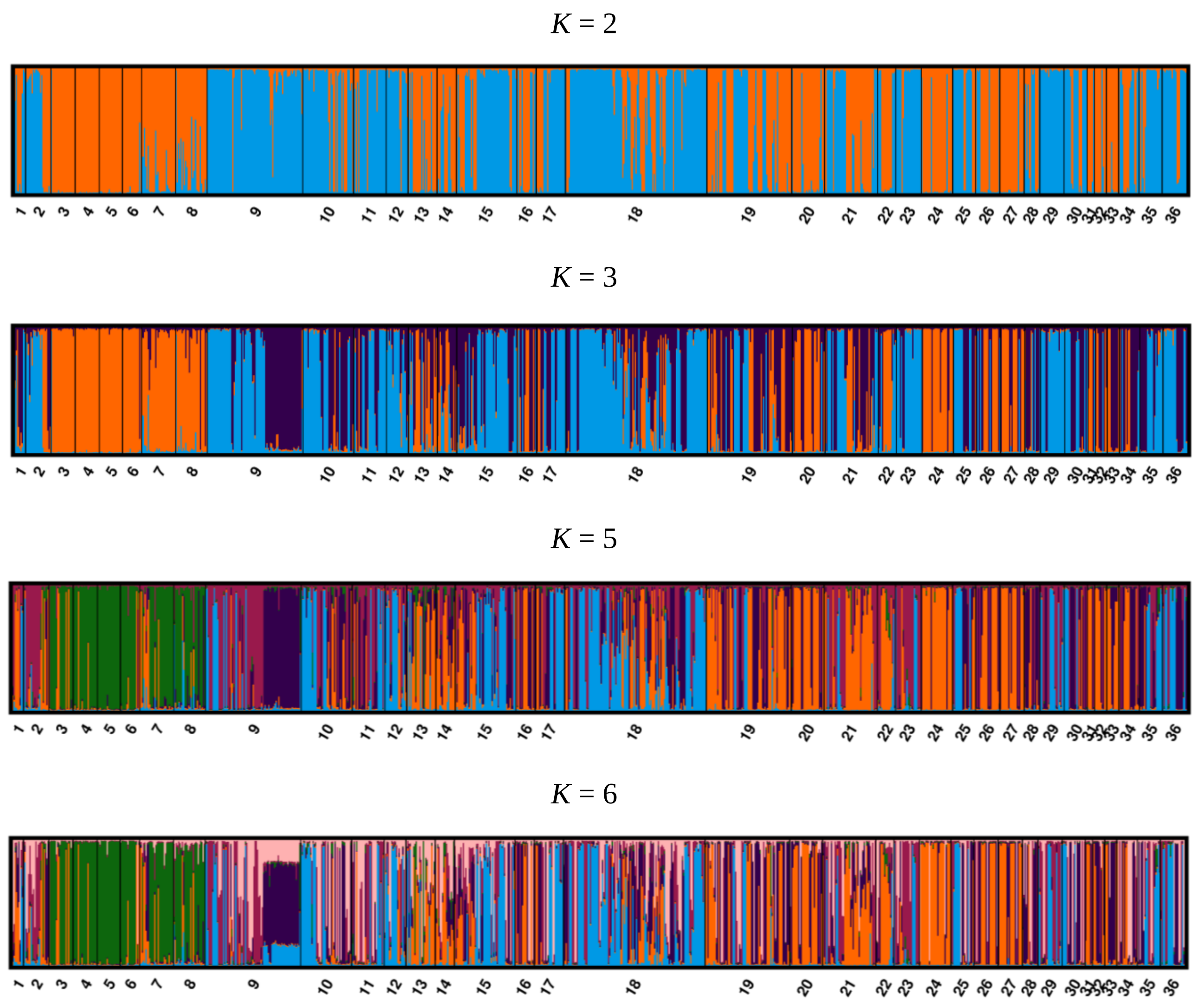

Figure S2. Structure plots representative of population genetic structuring of Walleye populations from the Mississippi, Tennessee, New, and Ohio River drainages and the Great Lakes at different levels of *K*. Populations are (1) Fellows Lake, MO, (2) Stockton Lake, MO, (3) Beaver/Table Rock Lake, AK/MO, (4) James/Table Rock Lake, MO, (5) Mozingo Lake, MO, (6) Smithville Lake, MO, (7) Current River, MO, (8) Black River, AK, (9) Clinch and Powell Rivers, VA, (10) Lake Fontana, NC, (11) Nantahala Lake, NC, (12) Lake Santeetlah, NC, (13) Bear Lake, NC, (14) Wolf Lake, NC, (15) Lake James, NC, (16) Lake Hiwassee, NC, (17) Lake Glenville, NC, (18) New River, VA, (19) Barren River, KY, (20) Goose Creek, KY, (21) Rockcastle River, KY (22) Levisa and Russell Forks, KY, (23) Allegheny River, PA, (24) Lake Erie, (25) Lake Ontario, (26) Mille Lacs, MN, (27) Lake Michigan, (28) Grand River, MI, (29) Flint River, MI, (30) St. Mary's River, MI, (31) Thunder Bay, Ontario, (32) Saginaw Bay, MI, (33) Oneida Lake, NY, (34) Lake Manitoba, Manitoba, (35) Lake Winnipeg, Manitoba, and (36) Lac Mistassini, Quebec.

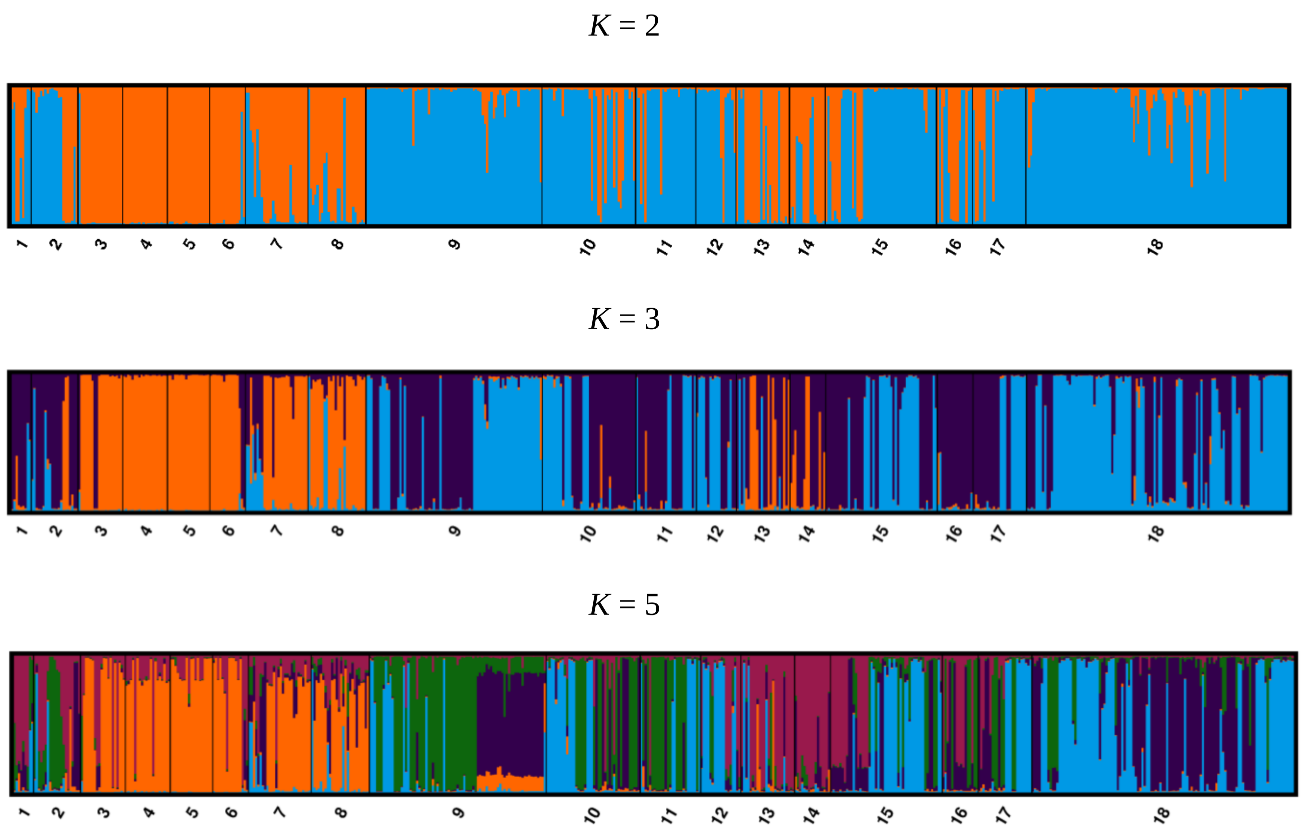

Figure S3. Structure plots representative of population genetic structuring of Walleye populations from the Mississippi, Tennessee, and New River drainages at different levels of *K*. Populations are (1) Fellows Lake, MO, (2) Stockton Lake, MO, (3) Beaver/Table Rock Lake, AK/MO, (4) James/Table Rock Lake, MO, (5) Mozingo Lake, MO, (6) Smithville Lake, MO, (7) Current River, MO, (8) Black River, AK, (9) Clinch and Powell Rivers, TN, (10) Lake Fontana, NC, (11) Nantahala Lake, NC, (12) Lake Santeetlah, NC, (13) Bear Lake, NC, (14) Wolf Lake, NC, (15) Lake James, NC, (16) Lake Hiwassee, NC, (17) Lake Glenville, NC, (18) New River, VA.

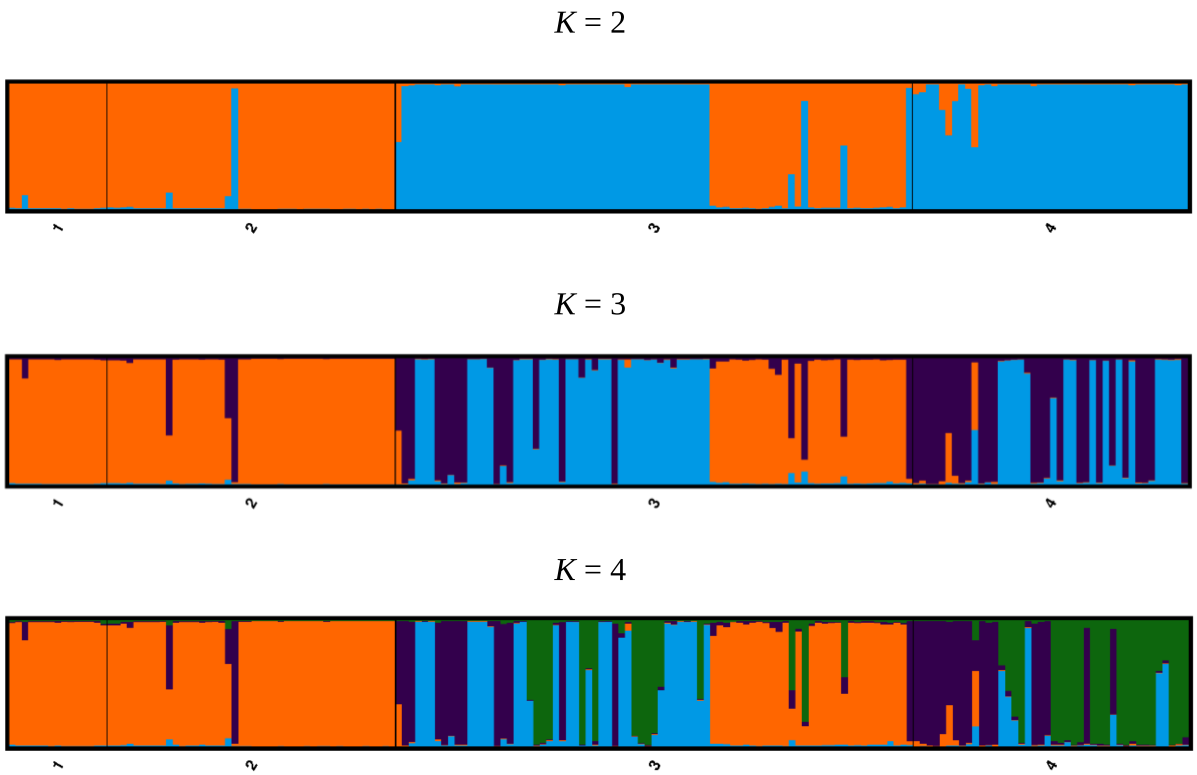

Figure S4. STRUCTURE plots representative of population genetic structuring of Walleye populations across three southern drainages. Populations are (1) Hatchet Creek, Coosa Drainage, AL, (2) John Allen Fish Hatchery, Tombigbee drainage, AL, (3) Clinch and Powell Rivers, TN, and (4) Lake Fontana, NC.