

SUPPLEMENTARY MATERIAL

Figures S1 to S7

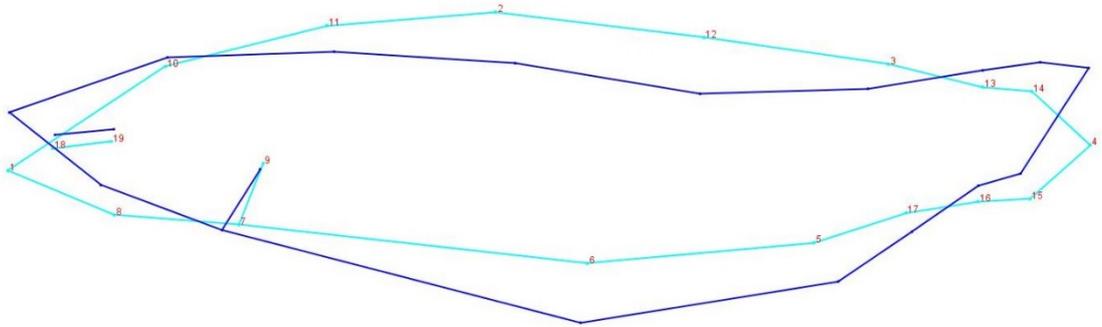


Figure S1. Shape change along PC1 of modelled arching shape variation that was removed, since it is biologically irrelevant. Light blue outline represents average shape and dark blue represents positive extreme shape change.

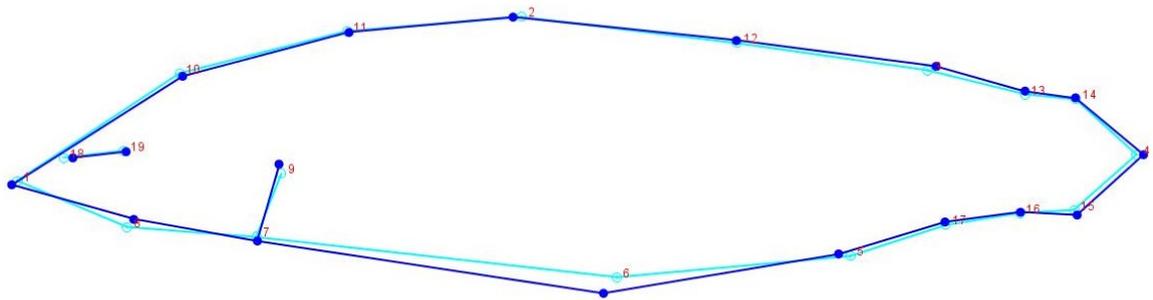


Figure S2. Removed shape change depicting sexual dimorphism and obtained by between-group PCA. Light blue outline represents average shape and dark blue represents positive extreme shape change (associated with male individuals).

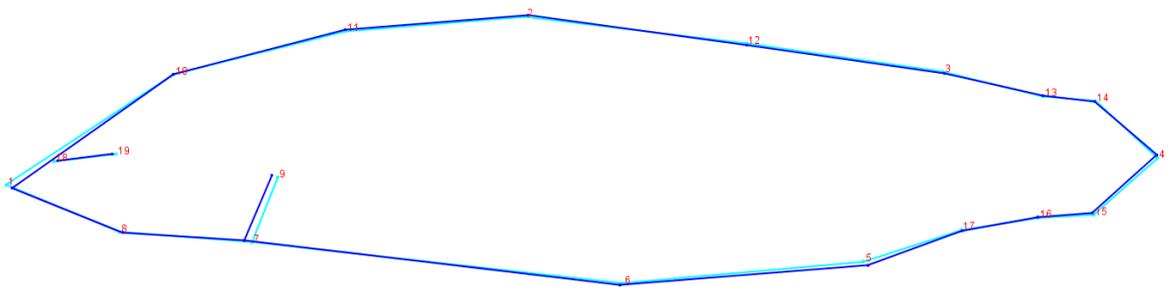


Figure S3. Removed shape change associated with centroid size (allometric shape variation). Light blue outline represents average shape and dark blue represents shape change associated with larger centroid size (larger individuals).

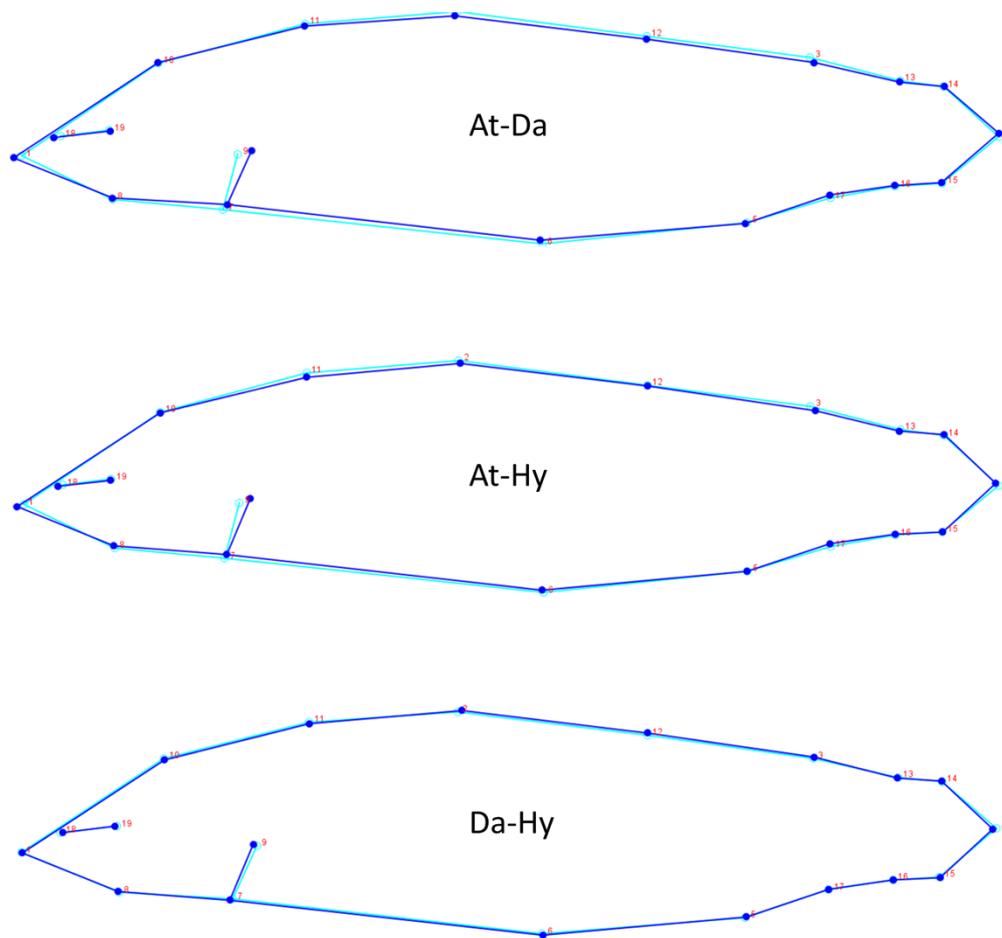


Figure S4. Shape change between the three trout lineages, determined by DFA. Light blue outline represents average shape of first mentioned lineage and dark blue outline represents average shape of the second lineage. At – Atlantic lineage, Da – Danubian lineage, Hy – hybrids.

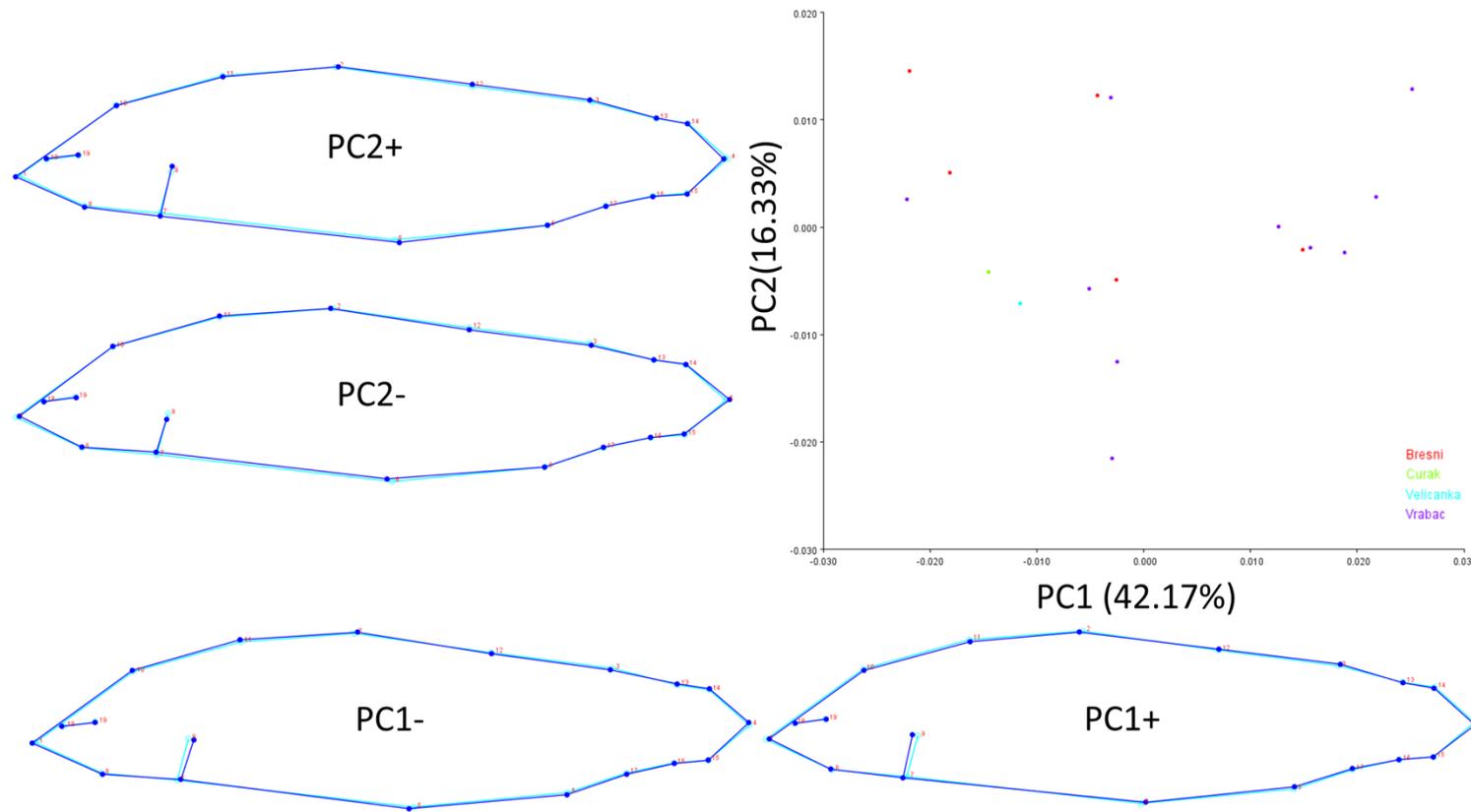


Figure S5. Scatterplot of the first two principal components of PCA depicting trout shape variation within Atlantic lineage. Wireframe graphs with 19 marked landmarks represent shape change along the first and second principal components, from negative to positive end. Light blue outlines represent the average shape and dark blue outlines represent shape changes.

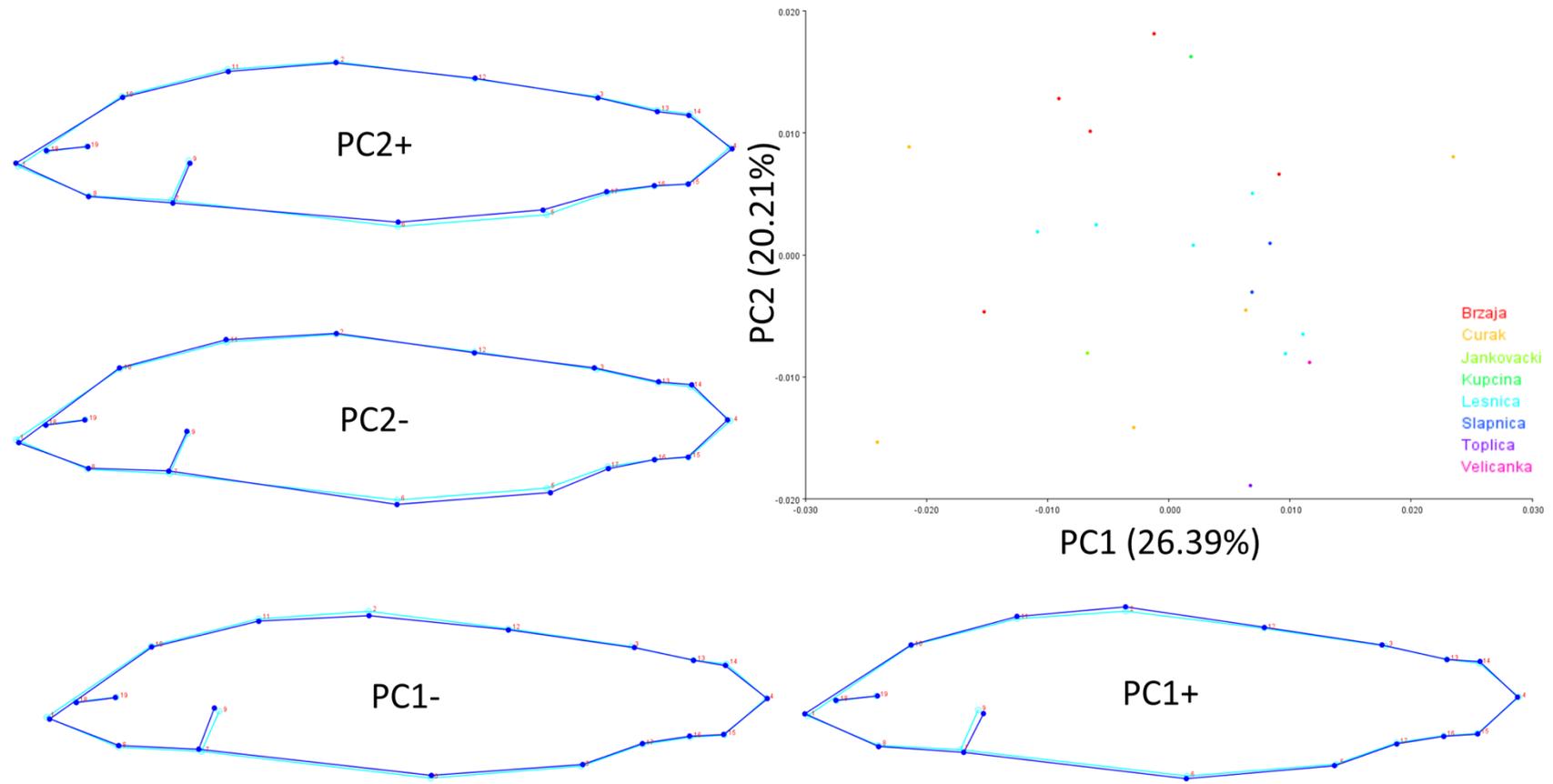


Figure S6. Scatterplot of the first two principal components of PCA depicting trout shape variation within Danubian lineage. Wireframe graphs with 19 marked landmarks represent shape change along the first and second principal components, from negative to positive end. Light blue outlines represent the average shape and dark blue outlines represent shape changes.

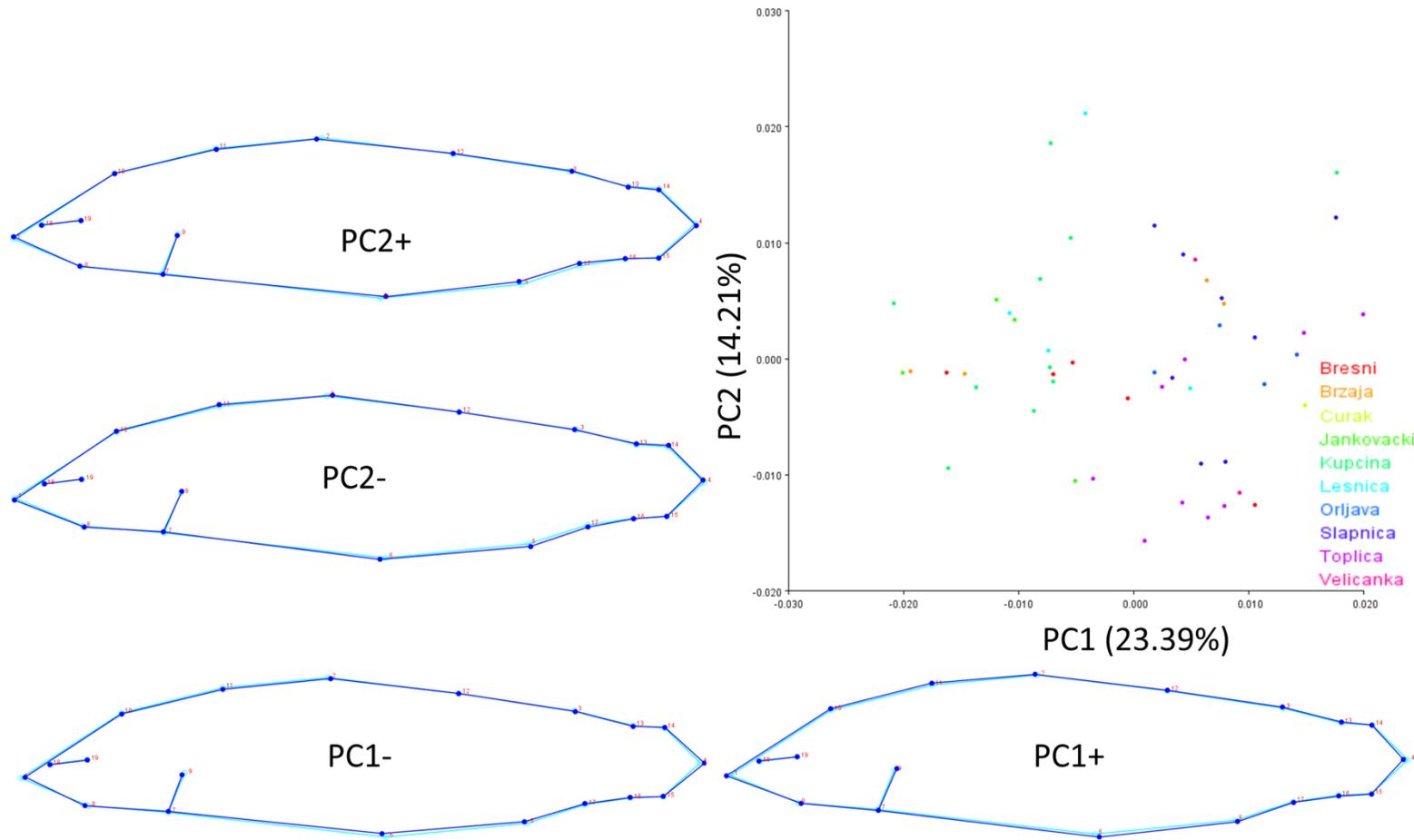


Figure S7. Scatterplot of the first two principal components of PCA depicting trout shape variation within hybrid group. Wireframe graphs with 19 marked landmarks represent shape change along the first and second principal components, from negative to positive end. Light blue outlines represent the average shape and dark blue outlines represent shape changes.

Tables S1 to S6

Table S1. Eigenvalues in the PCA for shape variation of Atlantic lineage trout.

PC	Eigenvalues	% Variance	Cumulative %
1.	0.00023796	42.169	42.169
2.	0.00009212	16.325	58.493
3.	0.00007676	13.603	72.096
4.	0.00004739	8.397	80.494
5.	0.00003634	6.441	86.934
6.	0.00002141	3.795	90.729
7.	0.00001222	2.165	92.894
8.	0.00001034	1.833	94.728
9.	0.00000933	1.653	96.381
10.	0.00000782	1.385	97.766
11.	0.00000413	0.732	98.498
12.	0.00000370	0.656	99.154
13.	0.00000287	0.508	99.662
14.	0.00000144	0.255	99.917
15.	0.00000047	0.083	100.000

Table S2. Principal component coefficients of corresponding Procrustes coordinates for first two PCs in the PCA for shape variation of Atlantic lineage trout.

Corresponding Procrustes coordinate	PC1 coefficient value	PC2 coefficient value
x1	0.290710	-0.313636
y1	0.046352	-0.098247
x2	-0.289247	0.218345
y2	-0.096378	0.012498
x3	0.172950	-0.169532
y3	0.126498	0.171652
x4	0.045841	-0.357994
y4	-0.238428	-0.044606
x5	0.043635	0.025711
y5	0.198958	0.007044
x6	0.404501	0.432124
y6	0.132160	-0.239161
x7	-0.328469	0.052211
y7	-0.087017	-0.248595
x8	-0.082737	-0.019299
y8	0.082782	-0.080049
x9	-0.486354	0.112055
y9	0.095552	0.511331
x10	0.080765	0.028867
y10	-0.112718	-0.030173
x11	0.045713	0.021520
y11	-0.190582	-0.090609

x12	0.015230	0.022938
y12	0.090510	0.178937
x13	0.011507	0.012381
y13	-0.061219	0.013135
x14	-0.036760	-0.029502
y14	-0.102580	-0.031625
x15	-0.013988	0.036309
y15	-0.011884	-0.077674
x16	-0.051626	0.004703
y16	0.017966	-0.040877
x17	-0.013569	0.005019
y17	0.101323	-0.030228
x18	0.140845	-0.030843
y18	-0.000169	0.069312
x19	0.051054	-0.051376
y19	0.008873	0.047934

Table S3. Eigenvalues in the PCA for shape variation of Danubian lineage trout.

PC	Eigenvalues	% Variance	Cumulative %
1.	0.00013552	26.387	26.387
2.	0.00010381	20.213	46.600
3.	0.00007235	14.087	60.687
4.	0.00005899	11.486	72.173
5.	0.00003469	6.755	78.928
6.	0.00002566	4.996	83.923
7.	0.00002019	3.931	87.854
8.	0.00001515	2.950	90.805
9.	0.00001311	2.553	93.358
10.	0.00000950	1.850	95.208
11.	0.00000701	1.365	96.573
12.	0.00000595	1.159	97.731
13.	0.00000344	0.670	98.401
14.	0.00000279	0.543	98.944
15.	0.00000245	0.476	99.420
16.	0.00000124	0.242	99.662
17.	0.00000067	0.131	99.794
18.	0.00000057	0.112	99.906
19.	0.00000029	0.056	99.962
20.	0.00000020	0.038	100.000

Table S4. Principal component coefficients of corresponding Procrustes coordinates for first two PCs in the PCA for shape variation of Danubian lineage trout.

Corresponding Procrustes coordinate	PC1 coefficient value	PC2 coefficient value
x1	-0.258702	-0.224457
y1	0.174264	0.281146
x2	-0.032074	-0.052438
y2	0.386394	-0.075924
x3	-0.295894	0.181404
y3	0.090269	-0.130105
x4	-0.102899	0.250927
y4	0.013211	-0.092283
x5	-0.134709	-0.326614
y5	-0.132750	0.411172
x6	-0.072541	0.031708
y6	-0.237106	0.397420
x7	0.261683	0.120369
y7	-0.223630	-0.238516
x8	-0.010387	-0.075258
y8	-0.121512	-0.067098
x9	0.453179	0.074681
y9	-0.305234	-0.229850
x10	-0.010543	0.070084
y10	0.064668	-0.103903
x11	-0.012323	0.047670
y11	0.209184	-0.211576
x12	0.017773	0.023082
y12	0.093915	0.089007

x13	0.005164	-0.028065
y13	0.005959	-0.128872
x14	0.066961	-0.093014
y14	0.142513	-0.158625
x15	0.041118	0.043542
y15	-0.047423	-0.009348
x16	0.029714	0.023008
y16	-0.088168	0.031240
x17	0.015224	-0.055260
y17	-0.094560	0.159484
x18	-0.048265	-0.066974
y18	0.048340	0.062870
x19	0.087520	0.055607
y19	0.021666	0.013759

Table S5. Eigenvalues in the PCA for shape variation of hybrid trout.

PC	Eigenvalues	% Variance	Cumulative %
1.	0.00011324	23.394	23.394
2.	0.00006878	14.209	37.602
3.	0.00005690	11.755	49.358
4.	0.00005220	10.784	60.142
5.	0.00004028	8.322	68.464
6.	0.00003141	6.490	74.954
7.	0.00002523	5.213	80.167
8.	0.00001984	4.099	84.265
9.	0.00001488	3.075	87.340
10.	0.00001032	2.132	89.472
11.	0.00000973	2.010	91.482
12.	0.00000811	1.676	93.157
13.	0.00000666	1.376	94.533
14.	0.00000555	1.147	95.680
15.	0.00000490	1.013	96.693
16.	0.00000451	0.933	97.626
17.	0.00000304	0.628	98.254
18.	0.00000223	0.461	98.715
19.	0.00000156	0.321	99.036
20.	0.00000142	0.292	99.328
21.	0.00000103	0.214	99.542
22.	0.00000081	0.168	99.710
23.	0.00000056	0.115	99.825
24.	0.00000033	0.068	99.893
25.	0.00000020	0.041	99.934

26.	0.00000012	0.025	99.959
27.	0.00000008	0.017	99.976
28.	0.00000005	0.010	99.986
29.	0.00000003	0.007	99.993
30.	0.00000001	0.003	99.996
31.	0.00000001	0.002	99.998
32.	0.00000001	0.002	100.000

Table S6. Principal component coefficients of corresponding Procrustes coordinates for first two PCs in the PCA for shape variation of hybrid trout.

Corresponding Procrustes coordinate	PC1 coefficient value	PC2 coefficient value
x1	-0.410783	0.014916
y1	-0.067466	0.196004
x2	-0.220770	-0.527949
y2	0.088447	-0.078809
x3	-0.057452	0.223805
y3	0.091051	0.003639
x4	-0.426162	0.100596
y4	0.032383	-0.202707
x5	0.215416	-0.221776
y5	-0.125781	0.260104
x6	0.397557	0.516863
y6	-0.296472	0.145401
x7	0.019247	0.119047
y7	-0.092336	-0.086952
x8	0.305469	-0.115945
y8	-0.035113	0.076307
x9	0.252804	-0.069610
y9	0.161795	-0.140290
x10	-0.033504	0.024156
y10	0.126207	-0.032848
x11	-0.016160	0.027276
y11	0.165428	-0.128732
x12	0.000342	0.001461
y12	0.033995	0.027769

x13	0.003759	-0.002767
y13	0.077682	-0.079888
x14	-0.055140	-0.063138
y14	-0.020364	-0.136282
x15	0.014623	0.024267
y15	-0.036284	-0.049905
x16	0.023089	-0.013383
y16	-0.068475	0.044180
x17	0.016148	-0.041449
y17	-0.091728	0.194504
x18	-0.039754	-0.071851
y18	0.035246	-0.011567
x19	0.011273	0.075477
y19	0.021788	0.000070