

8<sup>th</sup> International Conference on

## FISHERIES &amp; AQUACULTURE

October 02-04, 2017 Toronto, Canada

**Heritability estimates for growth-related traits using microsatellite parentage assignment in juvenile Florida bass**

Joshua C Sakmar and Richard B Stout

Florida Fish and Wildlife Conservation Commission, USA

We used microsatellite parentage analysis to reconstruct familial relationships of juvenile Florida bass (*Micropterus floridanus*) displaying variable traits of growth in a culture setting. Some study populations of age-0 juveniles (N=34,003) was segregated into two groups per size and randomly sampled; baseline growth group (BGA; N=250) and high growth group (HGA; N=250). Ten microsatellite loci were used for assignment of offspring to 119 potential wild-type brooders (sires N=47, dams N=72). Parentage was successfully assigned at a rate of 78%. Offspring of the BGA group showed broader parental contribution (44 unique parents; 31 pairings) than offspring of the HGA group (25 unique parents; 14 pairings). There was a significant difference of the top three parent-pairs per contribution rank between groups (BGA=48%; HGA=90%). This was due to a majority of the HGA group (83%) being represented by a single-pair (P22/P25). The pair showed a significantly reduced contribution to the BGA group (7%). Animal model heritability estimates of the BGA group were  $0.59 \pm 0.17$  for length (mm),  $0.60 \pm 0.17$  for weight (g) and  $0.39 \pm 0.15$  for Fulton's condition factor (K). It is concluded that traits of growth may be heritable and predicted by familial relationship within cultured populations of Florida Bass. While this study suggests a genetic component to growth in wild populations, the fact that heritability was estimated on juvenile fish in an aquaculture setting requires further investigations be conducted on wild adult populations.

josh.sakmar@myfwc.com