

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

# FISHERIES & AQUACULTURE

September 17-18, 2018 | Vancouver, Canada



## Hyeon-Ok Shin

Pukyong National University, Republic of Korea

### Movement range and behavioral characteristics of red seabream by acoustical telemetry

In order to collect basic information about a fish, the behavioral characteristics of fish in Byonsan Peninsular located at the coastal of the Yellow Sea, Korea were investigated. A cultured red seabream (*Chrysophry major*) CRB1 [total length (TL) 28.0 cm; body weight 380 g] was tagged with the acoustic tag. The acoustic tag was tagged internally by surgical method. The movement route of the tagged fish was tracked within 2 hours approximately using VR100 receiver and a directional hydrophone. The tagged fish was released on the sea surface around a construction site of wind power on the sea in the coastal of Byeonsan Peninsular on 22 September 2017. CRB1 has moved about 6.01 km with average swimming speed of 0.77 m/s (2.75 TL/s) during 2.1 hours. The mean angle of the movement direction of CRB1 was 92.8° and the swimming direction of CRB1 was not shown the circular uniformity ( $n=25$ ,  $z=20.6600$ , reject the  $H_0$ ). The water depth on the route was 8.5 to 9.8 m. There were significant correlations (Pearson correlation,  $p=0.001$ ,  $p<0.05$ ) between the tidal current direction and the movement direction of CRB1. To obtain the detail behavioral characteristics a test for fixing the location of the tagged fish with a hyperbolic method three independent acoustic receivers were used. In results, it was found that the time drift of the independent acoustic receiver can be removable with a reference acoustic transmitter. A reasonable time difference between receivers was derived successfully from the ambiguous time difference measured. 44 to 46 valid locations were obtained during 160 minutes in a pond. The twice distance root mean square (2drms) was less than 1.5 m when the transmitter was located inside of the baseline after removing the time drift of the receivers.

### Biography

Hyeon-Ok Shin has his expertise in evaluation and passion in education and researching the fisheries science especially on the behavioral and response characteristics of fishes exposed on the external physical stimuli. His open and contextual evaluation and research techniques create new pathways for improving fisheries science. He has built this technique after years of experience in research, evaluation, teaching in both of the research institutes and educational institutes. He joined in Pukyong National University 1997 and visited on Canadian Rivers Institute, UNB, Canada in 2005 to 2006 as a visiting scientist. He is interested in acoustic telemetry, environmental noise and vibration and behavioral response and growth change of fish.

shinho@pknu.ac.kr

Notes: