

Dynamics of rabbitfish migration into Tam Giang – Cau Hai lagoon: preliminary findings

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Nearly 90% of the aquaculture in Tam Giang – Cau Hai lagoon (VietNam), the biggest lagoon in South- East Asia, is dependent on fish fry caught from the wild. When fish fry migrate from open sea into the lagoon they are collected by fishermen using a range of techniques. Most fry is caught from April to November, during which period the species composition, number and price of the fry fluctuates. Therefore aquaculture completely depends on the natural dynamics of fish fry migration, which, in turn, closely relates to the lunar cycle. In this study we investigated the migration dynamics of White-spotted rabbitfish (*Siganus canaliculatus*), one of two rabbitfish species cultured in Tam Giang – Cau Hai lagoon.

We sampled fry using commercial fisher's gear consisting of a fyke-net, fixed to the bottom, with a 10m x 10m mouth opening. The net opening covered the whole depth of the water column, which was the most effective method for collecting fry. The first migration wave was collected from 9-23 May and sampling will continue during the rest of the migration season in 2016.

As expected, the weight of catch was closely related to the lunar cycle. The catch was at its maximum (370kg) when the moon was in its first quarter and decreased to a minimum of 3kg when the moon was full 10 days later. The composition of the catch also varied slightly with the lunar cycle. On average other species, such as anchovies, small pufferfish, small mackerels, squid and crabs constituted 1 to 9 % of the catch. Night-time catches contained from 2 to 3 times fewer trash species than daytime catches. Jellyfish appeared only for last 3 days of the migration cycle, but then could make up 50-90% of the total catch weight.

During the May migration wave, White-spotted rabbitfish was very homogeneous in length and weight (43.7 ± 2.3 mm body length and 1.04 ± 0.16 g body weight). This strongly suggests that these rabbitfish fry are all of the same age and most likely were spawned at the same time and in the same areas.

Table: The average (avrg), minima and maxima (mi-ma) for weight and length of rabbit fish fry and catch composition, for 14 sampling days in May 2016.

Rabbitfish fry		Catch composition							
Weight (g)		Length (mm)		Rabbitfish (kg)		Jelly fish (kg)		Other species (kg)	
avrg	mi-ma	avrg	mi-ma	avrg	mi-ma	avrg	mi-ma	avrg	mi-ma
1.04	0.67 – 1.43	44	38 - 48	131	3 - 366	3	0 - 30	4.5	0 - 25