

Growth and Sexual Maturation of Tagged Hatchery-Bred Turbot *Psetta maxima* Released and Recaptured in the Black Sea

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The turbot *Psetta maxima* is a very important commercial fish in the Black Sea coastal fisheries. But over the last 15 years, turbot stocks have declined due to overfishing. To increase the turbot stocks in the near future, Central Fisheries Research Institute (CFRI) and Japan International Cooperation Agency (JICA) started in 1999 the Fish Culture Development Project that included the release of hatchery-bred juveniles into the Black Sea. Thus for the first time in Turkish waters, hatchery-reared juvenile turbot were tagged and released in two locations on the northeast coast of the Black Sea on 8-11 March 1999. The 1,839 tagged juveniles were 293 days old, 18 cm in average length, and 102 g in average weight. About 7% of the tagged turbot were recovered by commercial fisherman and by the Institute's Research Vessel between March 1999 and July 2001 (Table 1).

Tagged turbot were recaptured at different distances and depths from the release sites up to a maximum distance of 80 km and maximum depth of 108 m. The latest recaptured turbot had a maximum length of 52 cm and weight of 2,682 g. During the first three

months (March to May 1999), the growth rate was negative (-0.14 g/day), but during the following months, the turbot put on weight and the daily growth rate increased. Between April 2000 and April 2001, recaptured turbot contained ripe eggs and were maturing or mature. First sexual maturation in the tagged turbot population was at 2 years of age. Thus, it appeared that the tagged turbot grew faster and became sexually mature earlier than wild ones.



Table 1. Tagging and Releasing Turbot (1999-2002)

Releasing Date	Locality	Tagging Fish Number	Recaptured Fish	
			Number	%
1999	Trabzon	1839	130	7.1
2000	Trabzon	3666	61	1.7
	Giresun	1000	18	1.8
2001	Rize	600	5	0.8
	Giresun	1036	16	1.5
	Ordu	186	4	2.2
	Samsun	778	3	0.4
	Sinop	1015	-	-
2002	Trabzon	13569	45	0.3
	Giresun	935	12	1.3
	Ordu	1067	30	2.8
	Samsun	1612	-	-
	Sinop	875	-	-
TOTAL		28178	324	1.1