

OPTIMIZING FISH SIZE AND APPLYING A CONDITIONING TRIAL IN A DANISH FLATFISH STOCKING PROGRAM.

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Several studies on released turbot and other species have reported very high mortality combined with limited feeding of the individuals shortly after the release. This period following the release event has been referred to as the 'post-release period', where the loss of fish can be considerable and the feeding ability of the remaining fish presumably suppressed. To limit the negative effects of the post release period on the outcome of stocking, conditioning trials before the release have been proposed and successfully implemented to prepare the reared individuals for their new environment.

As a part of a national stocking program, turbot *Psetta maxima* have been released annually since 2001 into a semi-enclosed Danish bay. These releases have been surveyed intensively to investigate how the size of the released individuals and conditioning trials affected the post-release period. During 2004 and 2005, half of the fish to be released (size 3 to 17 cm; age 0 and age 1) were kept in bottomless cages at the release location for 3 to 6 days before release. The diet of the recaptured individuals was analyzed with two objectives in sight; (1) to establish the time from when the conditioned fish was released until their stomach contents resembled that of their wild counterparts in the same area, and (2) to measure the relative energy intake of the different size classes released to evaluate which sizes and ages that were most efficient in using the available prey. These results were compared to similar releases at two different locations in Denmark.

In Århus Bay, mysids constituted the majority of the prey items found in the stomachs of all sizes of fish, both released and wild. The proportion of wild fish with empty stomachs increased with size. For example, 25% of the wild turbot larger than 12 cm had empty stomachs, whereas only 12% of the turbot smaller than 12 cm had empty stomachs. Although the proportion of empty stomachs increased with size, the total energy intake was higher for the larger turbot due to the higher frequency of fish prey and larger prey items. Even relatively small turbot (<10 cm) had fish and other larger items in their stomach, which shows that the fish at an early size are able to use all available food items in the release areas. We found that the size of the turbot released and a conditioning trial had a positive effect on the time needed to reach the same level of feeding as found in wild conspecifics.