

going full circle

Introduction

In 2003, the Environment Agency in Cornwall established a collaborative salmon-rearing programme with the Camel and Fowey River Associations. This angler-led initiative uses broodstock donated by anglers. Up to half the annual declared rod catch on these rivers is taken on natural baits (predominantly worm).

The issue

In 2003 and 2004, it was observed that salmon broodstock caught on worm displayed a variable degree of mortality when held under hatchery conditions. Worm-caught fish hooked in the mouth survived well, going on to be stripped successfully up to two months after being donated. But the condition of all deeply hooked worm-caught salmon (including fish that would normally have been released back to the river) slowly deteriorated and they typically died after 2-3 weeks. These fish initially appeared fit and healthy, and suitable for inclusion in the rearing programme.

Salmon mortalities

Direct comparison of post-release mortality could be made because the deeply hooked fish and the mouth-hooked fish received the same treatment at the hatchery.

Post-mortem analysis of deeply hooked worm-caught fish revealed that significant internal damage had occurred during hook setting and the playing of the fish.

This included penetration of the gut wall and bacterial infection of the peritoneal cavity caused by rotting worm held in situ by the hook (Figure 1). In one instance, penetration of the trachea had damaged the heart muscle.

Figure 1.



Post-mortem examination of deeply hooked worm-caught salmon. Note infection of internal organs within peritoneal cavity.

Anglers trial circle hooks

There is an increasing need for salmon conservation and catch and release. The mortality of deeply hooked worm-caught fish is a concern to both the Environment Agency and anglers.

A number of expert salmon anglers on the Camel and Fowey rivers therefore agreed to take part in a trial using circle hooks. These hooks are designed to catch fish in the mouth. The hooks trialled were size 2 VMC circle hooks model no 7381BN (Figure 2).

Figure 2.



VMC circle hooks model no. 7381BN size 2

Of the 15 salmon captured using these hooks, only one was deeply hooked. The anglers taking part in the trial thought that up to 50 per cent of salmon are hooked deeply when using traditional 'J' hooks.

The Environment Agency, River Associations and anglers agreed that circle hooks could offer significant benefits to salmon conservation.

New voluntary rules

At the request of the Environment Agency, the Camel and Fowey River Associations have implemented a rule throughout each river requiring the use of circle hooks when fishing with worm from 30 September to the end of the season on 15 December.

Evidence from anglers suggests that other natural baits (particularly prawn) do not result in the same degree of gut hooking.

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