

Salmon Catch & Release Under Conditions Of High Water Temperature

Under conditions of high water temperature Atlantic salmon are at increased mortality risk from catch & release angling. This guidance seeks to minimise these additional risks through the use of catch and release best practice on the rivers Test and Itchen.

Atlantic salmon (*Salmo salar*) are a cold water species that are poorly adapted to high water temperatures. Their thermal optimum is near 16°C with temperatures significantly above this leading to additional stress and extended periods of recovery after exertion. Salmon utilize stored reserves of energy to migrate to spawning areas and successfully spawn. At elevated water temperatures these reserves are used up more quickly both at rest and during exertion.

Studies of salmon survival after catch and release have indicated increased mortality of fish at high temperatures. In general, the higher the temperature above the thermal optimum the higher the risk of mortality after release. Alongside the higher oxygen demand of salmon at high temperatures comes a range of other compounding factors. As water temperatures increase so the amount of oxygen that can dissolve in water decreases, increasing the recovery time from exertion. Plant activity in warm, sunny conditions provide more oxygen to the water during the day but at night the water temperatures can remain high when plants revert to extracting oxygen from the water. This can lead to lower concentrations of dissolved oxygen particularly in the early hours of the morning.

The salmon rivers of Hampshire are groundwater fed with cool water but water temperatures in the lower river can rise above 20°C in periods of hot weather with peak water temperatures occurring around 6pm. The daily range in water temperature between maximum and minimum varies between rivers but might normally exceed 3°C in hot weather.

In order to minimise the risks to local salmon populations the Environment Agency recommends the implementation of the following measures.

Best Practice Guidelines for Catch and Release:

1. That only single barbless (or de-barbed) hooks are used
2. Fish should be brought to the net as soon as practicable rather than played to exhaustion¹
3. Fish should be unhooked in the water as quickly and carefully as practicable
4. Fish should only be released when they are sufficiently recovered to swim away
5. Anglers should identify sites at their angling location suitable for the safe unhooking and recovery of fish prior to angling, such sites would preferably include good stream-flow to revive fish
6. Where fish fail to recover after capture and attempted release the local EA Fisheries Team should be contacted immediately - Telephone: 07785 990308.
7. When water temperature exceeds 20.0°C² at any time salmon angling should be suspended until water temperatures fall below this threshold³
8. When the water temperature exceeds 19.0°C² at 9am BST then all salmon angling should be suspended at least until determination at 9am the following day.

These measures are intended to apply to all salmon fisheries of the rivers Test and Itchen.

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¹ Particularly at high water temperatures

² Measured at the designated temperature monitoring site for the river

³ Some fisheries may allow fishing in the early morning to avoid the higher water temperatures