Golden Perch Survival in Winter

In eastern Australia, golden perch (or yellowbelly) are caught and released in large numbers (almost 1 million a year) across a range of water temperatures, but mostly during Spring and Summer when they become active for spawning.

As part of a project to maximise the survival of key freshwater species released by recreational anglers, DPI Fisheries (with funding from recreational fishing licence fees) held two research events to target golden perch during last Winter/Spring at Copeton Dam.

The aim was to document the survival of golden perch after catch and release in cold water, as a reference for comparison with survival rates to be obtained from large fishing competitions proposed for Summer. However, the practicality of getting golden perch to bite during Winter and enticing anglers to target them during this traditionally slow season proved to be quite a challenge.

The winner of the competition, Dale Graham, with one of his six golden perch.

During the two events, we asked volunteer anglers to use conventional gear to target golden perch and then release their fish into individual floating 110-litre cages at the capture location, instead of directly back into the wild.

Anglers also filled in a data sheet with details of their fishing gear and methods, the capture location and anatomical hook location.

Researchers checked the condition of each fish, recorded the water temperature and depth, and then lowered the cages to the bottom.

To ensure that being caged didn't affect the survival of caught-and-released golden perch, 38 'control' fish were also individually caged. These control fish were collected from Copeton Dam with gillnets four weeks before the first event and were held at the Grafton Aquaculture Centre with optimum care for the intervening period.

Just before the start of the first event, the controls were transported back to Copeton Dam and placed in individual cages randomly distributed around the dam. These fish were left undisturbed for four days and then retrieved to assess their stress levels (obtained from blood samples) and survival.

Researcher Craig Brand measures the largest golden perch landed during the competition (590mm total length).

BLEAK START

The first event was held over a weekend in late August 2007 during harsh Winter weather . Water temperatures in the dam ranged between 11° and 17° and air temperatures were just as cold.

Unfortunately, due to the wet and windy conditions and despite considerable effort by 15 anglers, not one golden perch was caught. But

all was not lost; none of the 38 control fish died during four days of monitoring and all were released in excellent condition. This result verified that the cages didn't affect the survival of golden perch in cold water.

To ensure that this information obtained from the control fish was not wasted, a second event was held in early September . Fortunately, the conditions were near perfect, the average water temperatures in the dam were still quite cool (from 13° to 18°) and the golden perch seemed keen to bite.

Prizes were awarded to the three anglers who caught and released the most golden perch into cages. The winner was Dale Graham, of Coffs Harbour, whose long hours on the water paid a dividend of six fish.

After taking Saturday afternoon off to play his football grand final, Deon Beckhouse, of Inverell, finished a close second with five fish, while another local, Mick Vickers, took out third place with three fish. The largest golden perch (590mm total length) was landed by Paul O'Neill, of Delungra.

Two anglers discuss the correct technique for venting fish with researcher Karina Hall

100% SURVIVAL

Overall, 40 fish were caught and released into cages during the competition and over the following week by 18 anglers and five researchers.

Like the previously-monitored controls, none of the caught-and-caged fish died during the four-day monitoring period, and all were released back into the dam in excellent condition.

While our observed 100% survival rate was very positive, it should be noted that despite the use of a variety of tackle (including baits), all fish were hooked in the mouth, which is generally considered a much milder treatment than deeper (gut) hooking.

Further work will be required to assess the survival of gut-hooked fish. We hope to address this issue, along with the influence of warmer water temperature and deeper capture depths on survival, during some large fishing competitions .

Identifying those factors that contribute towards mortalities and/or sublethal impacts on golden perch will help us to recommend simple protocols for anglers (such as specific onboard handling methods) that maximise their survival.

We would like to take this opportunity to sincerely thank all members of the St Kilda Fishing Club of Armidale, who braved some fairly average conditions to assist us with the first event and members of the Australian Hotel Fishing Club of Inverell, Delungra Hotel Fishing Club and the organisers of the Great Inland Fishing Festival, who generously gave their time and effort to take part in the second event.

Fish cages on the bank of Copeton Dam ready for distribution to anglers. The cages were to hold the fish after release.

Thanks also to the Copeton Waters State Park for their co-operation with both events and the Recreational Fishing Trusts for funding.

For further information regarding this research or to participate in a similar event, call the NSW DPI Fisheries Conservation Technology Unit at Coffs Harbour on 02 6648 3900.

– Karina Hall, Matt Broadhurst, Paul Butcher, Craig Brand, Shane McGrath