

NSW DEPARTMENT OF PRIMARY INDUSTRIES

JOHN HOLLIDAY STUDENT CONSERVATION AWARD

– 2009 –

2009 WINNER

Alexander Pursche



Winner of the 2009 John Holliday Student Conservation Award
*Picture from left to right: I& NSW's Chief Scientist, Prof. Steve Kennelly, Mr Alexander Pursche (winner)
and the Parliamentary Secretary, Treasurer – Mr Barry Collier*

OTHER ENTRY RECEIVED FOR 2009

Andrew McKinley

**** 2009 WINNING ENTRY ****

Estuarine fish-stocking ecology: Do naïve fish recognize key habitat?

By Alexander R Pursche

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Summary

Restocking of fishes is used worldwide as a management technique for augmenting depleted fish stocks. Success of fish stocking programs is dependent on a wide range of complex factors including size, season, and site of release; but do naïve fish recognize the same habitat of their wild con-specifics? Release strategies known as targeted stocking whereby fish are released directly into key habitat from a boat have been proposed to minimize emigration from the stocking site, and maximize survival of released individuals. In order to monitor the success of targeted stocking, 14 juvenile hatchery reared mulloway *Argyrosomus japonicus* were tagged with acoustic transmitters and released into the Georges River, NSW, where two release scenarios were tested, 1) 'point source stocking', whereby fish are released from the shore at a convenient location (i.e. boat ramp) and 2) 'targeted stocking', whereby fish are released directly into habitat. Fish released directly into habitat showed higher site fidelity, lower daily activity, and spent a greater proportion of time occupying key habitat than fish released at the shoreline. We recommend identifying and releasing directly into key habitat for the stocked species, to maximize the success of stocking programs.

Assessing an understanding ecological changes to fish communities in highly disturbed estuaries

By Andrew McKinley

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Summary

Due to a variety of anthropogenic stressors, many marine fish species around the world have experienced both rapid and long term population decline. Currently little is known about how multiple anthropogenic stressors, such as contamination, affect fish ecological function, abundance, and diversity. My research investigates how a variety of stressors impact these ecological values within New South Wales (NSW) estuaries. Fish assemblages are assessed through an innovative mixture of field survey techniques. This survey is conducted over a large spatial scale in seven major NSW estuaries. Survey data is analysed within the context of detailed contaminant and water quality data, obtained through parallel sediment and water studies. Cause-and-effect relationships between pollution levels and fish health are tested through field experiments. This research will yield important insights regarding the impacts of multiple stressors on fish assemblages and will help to guide the management of fish populations in both pristine and highly modified waterways.