

CATOSTYLUS JELLYFISH: A STINGING PREDICTOR OF DISCARD MORTALITY

Sebastian S. Uhlmann¹, Matt K. Broadhurst², and Craig P. Brand²

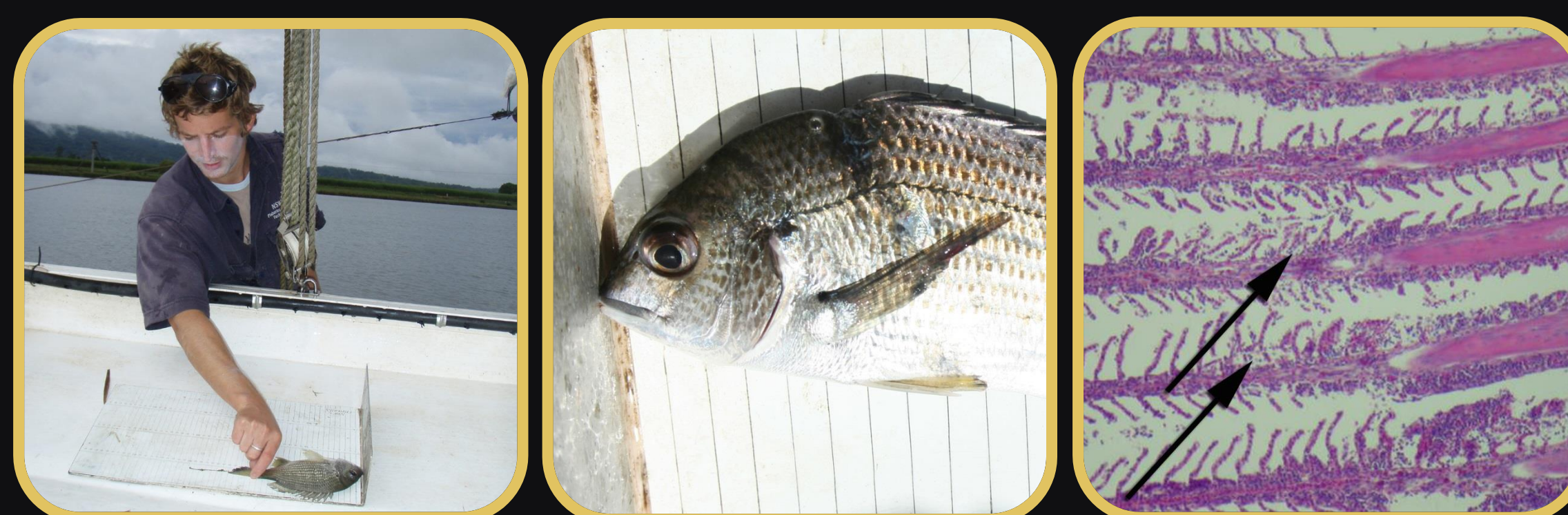


1 Nematocyst cells ejected by gelatinous zooplankton (e.g. cnidarians and ctenophores; ‘jellyfish’) are harmful for many organisms, including humans. Despite more frequent blooming events in warm, productive coastal waters, the effects of nematocyst cells on discards remain understudied in Australia and elsewhere.



2 During studies to maximize the survival of bycatch discarded from small-scale fisheries in New South Wales, Australia, jellyfish (*Catostylus* spp.) in either the catch (trawls) or netting panels (gillnets) had significant, deleterious effects on the survival of yellowfin bream (*Acanthopagrus australis*), southern herring (*Herklotsichthys castelnaui*), silver biddy (*Gerres subfasciatus*) and forktail catfish (*Neoarius graeffei*).

3 The specific causes of mortality were hypothesized to involve either compression injuries (for trawled fish) or, more likely, skin (especially among forktail catfish) and gill damage (all species) caused by nematocyst discharge. The latter hypothesis was tested during subsequent work assessing the gill histopathology of trawled yellowfin bream.



4 However, despite clear tissue sloughing and congestion (black arrows in the picture), no nematocyst cells were observed — possibly reflecting relatively low catches of jellyfish. Irrespective of the mortality mechanisms, interactions between jellyfish and discarded catches in the studied fisheries can be avoided via mechanical separators in trawls and/or small-scale spatial avoidance.



¹ Institute for Agricultural and Fisheries Research (ILVO), Ankerstraat 1, 8400 Oostende, Belgium



Department of Primary Industries

² NSW Department of Primary Industries, Fisheries Conservation Technology Unit, PO Box 4321, Coffs Harbour, NSW 2450, Australia



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