

Title: **Economic Approach to Fisheries Management and Allocation With Short Run Diminishing Stocks**

Authors: Robert Lindner, Economic Research Associates (Australia)  
Seamus McElroy, University of Western Australia (Australia)  
Paul McLeod, UWA Business School (Australia)

Abstract: In the standard economic approach to optimal allocation, aggregate economic benefit is maximised where the sustainable harvest is allocated so that marginal net benefits are equal. The model assumes a known sustainable harvest. It also assumes optimal intrasectoral allocation in each sector. The Western Australian West Coast demersal fishery, like many fisheries, is based on a common fish stock exploited by both commercial and recreational fishers. A multispecies fishery, it includes prize species such as dhufish and pink snapper that are iconic for recreational fishers and highly regarded commercial table fish. Recent stock assessments have concluded that stocks are under threat and significant restrictions have been placed on both commercial and recreational fishers. The management framework must now deal simultaneously with reducing aggregate harvests and achieving optimal allocation. This paper applies the economic model of optimal allocation to establish a benchmark allocation for the iconic species baldchin groper, pink snapper and dhufish, using survey based estimates of the marginal economic surplus from commercial and recreational fishing. Current restrictions are evaluated against this benchmark economic optimum to determine how well they align with the model and what adjustments might be appropriate. Empirical lessons based on data collected from commercial and recreational fishers in the fishery are used to also consider whether the basic economic model of allocation is itself in need of refinement to deal with the current circumstances, in particular the changes in recreational fishing behaviour that might involve switching effort to the less constrained non iconic species.