

DISCOVERERS WELCOME

WAMSI 4.5.3



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Socio-Economic Assessment of Scalefish Fisheries (Inshore Demersal) in the West Coast Bioregion

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EBFM Assets: Inshore Demersal

- Three sectors targeting suite of demersal species (**Asset #8**) and generating mix of economic and social benefits
- **Captured Species:** Severe for indicator species, and high-moderate for other captured species; consolidated risk severe
- **Economic Impact:** GVP rating recorded as 2 (low) and Economic Risk as 3 (moderate) but may require reassessment as result of this project
- **Social Impact:** Severe for recreational and commercial sectors, high for charter sector (direct stakeholders)
- **Social Amenity:** High
- **Departmental Management Priority:** Urgent

Context for Socio-Economic Assessment

- Management reforms introduced since 2007 designed to reduce combined harvest by 50% for species suite
- Co-ordinated action across the three sectors required to achieve EBFM objectives
- Future socio-economic impacts contingent upon (a) condition of biomass, (b) expected patterns of economic and demographic growth, and (c) management regimes/scenarios for each sector

Recreational Fishing Sector (boat-based demersal fishing)

- **Background:** Long-term increase in catch of demersal species suits (driven by population growth, increasing boat ownership, spread of technology & rising affluence); catch rates (species mix) differs by zone; reduced bag limits in 2003, 2008 and 2009; closed season introduced 2009 (15 Oct-15 Dec); RFBL introduced March 2010 (provides a database of fishers in WA) needs developing as a monitoring tool; indications that required 50% reduction in recreational catch not yet achieved, therefore further measures are needed (political sensitivities surrounding extended measures, including longer closed season, higher license fees and other alternatives)
- **Data Availability:** Boat ramp (creel) survey 1996-97; joint boat ramp & telephone diary surveys 2005-06 & 2008-09; other location-specific creel surveys; current creel & behavioural surveys for 2009-10; data availability and quality for stock assessment decreasing, need for a long-term recreational fishing monitoring program in West Coast Bioregion as identified in Node 4.4.3 (statistically robust compulsory scheme with licence vs voluntary scheme)

Recreational Fishing Sector (boat-based demersal fishing)



- **Socio-Economic Characteristics:** high participation rates and great economic significance (603,000 fishers in 2008/9 spent over \$1.2B state-wide); indications that satisfaction levels are falling with reduced bag limits & tighter enforcement; but total expenditure on boats, gear, and fishing trips averaging close to \$2,000 per fisher each year and continuing to rise, with flow-on effects; contributes to individual/family wellbeing and community wellbeing, and to social capital both locally and regionally; social and economic values attached to consumption of catch; cultural/lifestyle significance of recreational fishing
- **West Coast Recreational Fisher Telephone Survey 2010 & 2011:** **includes** demographic and economic data collection to assist with socio-economic profiling of sector, and essential to 4.5.2 modelling of behaviour of recreational fishers to management changes by zone and by fisher 'type' (4.5.2); includes CPUE, species catch & release; builds on earlier socio-economic studies (1991 and 2003); will enhance knowledge of recreational fisher behaviour in response to management (currently inadequately understood)



Charter Fishing Sector (fishing tour operators)

- **Background:** decreasing number of active operators since introduction of log-books (30% decline since 2002, 138 fishing tour operators in 2007-08), and increasing latent effort (39% in 2005/06 to c.70%+ in 2009/10); many fishing tour operators converted to eco-tour operators since 2005; acute economic impact of GFC and recent management reforms; concentration of effort in Metro zone (c.70%), Abrolhos and Kalbarri; sector currently under review.
- **Data availability:** license-holder database; state-wide catch and effort data collected since 2001 based on daily returns; annual reporting; survey of customer satisfaction; behaviour and economic impacts poorly understood; work of Lindner, McLeod & Nicholls (2003-2006) provides objective socio-economic framework for assessment of catch shares allocated to sector
- **Socio-economic characteristics:** low economic impact (employment and income); sensitivity to management changes highly dependent upon licensee profile (age, income, years in the sector, past occupation/ qualifications); business operation highly susceptible to short-term economic fluctuations (economic downturns decrease demand); also susceptible to long-term changes in social values (growth of eco-tours); high customer expectations and evidence of increasing dissatisfaction; Importance of customer satisfaction and loyalty and word-of-mouth for charter businesses

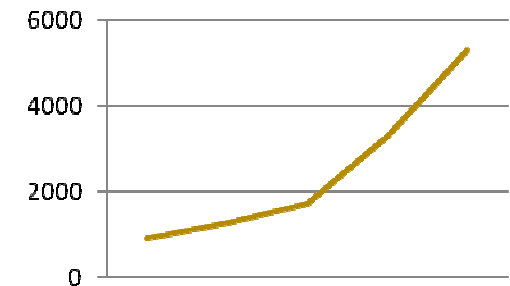
Commercial Fishing Sector (wetline demersal scalefish)

- **Background:** introduction of West Coast Demersal Scalefish Managed Fishery regime in 2008-09 has led to reduction in total catch&effort, and removal of effort from 200 km wide metropolitan zone (>50% since 2005/06);
- **Data availability:** stock assessments; fleet size & trip-by-trip (since 2008) catch returns covering the sector are relatively stable (annual basis); high level of coverage (>90%) and accuracy; long consistent data collection system; annual returns show relatively stable and sustainable harvest levels; behaviour of commercial fishers in relation to management changes generally well-understood at the national/international level
- **Socio-economic characteristics:** moderate/low impact with decreasing income, employment and flow-on effects (from \$4.8M annual catch value in 2006/07 to \$3.4M in 2008/09); sensitivity to management changes highly dependent upon licensee profile (age, income, years in the sector, previous occupation/qualifications); business operation susceptible to short-term economic fluctuations (economic downturns affect demand) and long-term substitution from imports; society values locally-caught seafood not quantified but significant (high prices paid for locally-caught finfish)

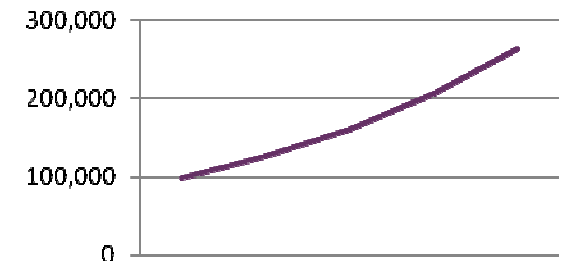


Case-study of Mid-West 'hot spot': Socio-Economic Assessment for Jurien Bay

- **Recreational Sector:** Increasing effort due to improved access (Indian Ocean Drive), facilities (marina), and Marine Park; high catch rates relative to other zones for key species (Dhufish, Baldchin Groper). Local Socio-economic impact: High
- **Charter Sector:** One Fishing Tour Operator and One Eco-Tour Operator; potential for growth of eco-tours. Local Socio-economic impact: Moderate
- **Commercial:** Single operator based in town (two others nearby). Local Socio-economic impact: Low
- **Socio-Economic Features:** decline in economic and social impact of rock lobster fishery; aquaculture developments; growing tourism mean increasing economic dependence on recreational fishing; non-extractive marine resource use (diving, windsurfing, etc); several real estate and business developments underway to cater for anticipated growth of resident and visitor population



Population Growth and
Projection (1996-2016)



Domestic Tourism Growth:
Visitor Nights (1996-2016)



Case-study of Mid-West 'hot spot': Scenario Analysis for Jurien Bay

- Scenario Analysis to proceed on basis of examination of economic and social impacts across each sector (2005-10) and expected patterns of economic and demographic growth, and outline five-yearly projections for socio-economic impacts of alternative management measures (to 2035) under different scenarios of stock recover: no recovery, slow recovery (slight reduction in combined harvest of species suite under similar management framework), and strong recovery (heavy reduction combined harvest of species suite under a more extensive management framework)
- Scenario Analysis to be repeated for case-study locations within each zone: Kalbarri (Kalbarri), Mid-West (Geraldton), Metropolitan (Two Rocks, Hillarys, Rockingham and Mandurah) and South-West (Geographe Bay and Augusta)



Knowledge Gaps: Future Work

- **Current work:** has focussed on project development, survey design (including the 4.5.2 Telephone Survey), secondary research (existing data), and preliminary field trips
- Monitor and project changes in revenues & costs (profitability) of commercial sector under the changed management framework by comparing period 2004-07 (open access) with 2008-10 (after introduction of TACC and TAE) with the support of WAFIC and DOF; comparison of the scale of costs and benefits with those under an ITQ scheme
- Determine changes in profitability and customer satisfaction of charter fishing boat sector 2004-2010 with support of the CBOOA and DOF
- Socio-economic analysis and modelling the behaviour of recreational fishers and their responses to past, current and proposed regulations using range of recent and forthcoming surveys
- Assess socio-economic impacts of recent changes on the three sectors, covering direct and indirect social and economic costs and benefits, impact on 'social capital' and community wellbeing across each zone within the West Coast Bioregion and at selected 'hot-spot' locations
- Recommend future socio-economic research priorities for the commercial, charter boat and recreational sectors over the coming 5 years for each zone in the West Coast Bioregion



Management Implications

- Enhanced understanding of Recreational Fisher Behaviour is fundamental to assessment of the sector's social and economic impacts (need for integration of 4.5.2 results into 4.5.3 Final Report)
- Need to develop long-term/continuous monitoring program of recreational fisher catch and effort, which covers a representative sample of fishers and behaviour; RFBL database provides the platform for ongoing research but requires development as a monitoring tool (Node 4.4.3 research underway on cost-effective non-commercial monitoring)
- Improved understanding of economic and social impacts of the inshore demersal scalefish fishery will assist with the allocation of catch shares across each of the three sectors in such a way that optimises socio-economic benefits; and will build on the socio-economic framework for resource allocation completed by Lindner, McLeod & Nicholls (2003-2006) under FRDC 2003/039
- Enhanced knowledge of socio-economics will assist with DOF asset risk ratings for social and economic impacts (reassessment of GVP and economic risk ratings for asset)
- Improved understanding of economic and social impacts will allow for long-term monitoring of changes in these impacts, and facilitate the implementation of EBFM in the West Coast Bioregion
- Development of skills in socio-economic analysis for application to EBFM