



# Marine Science in WA 2010 Show-&-Tell

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**Newsflash title: The evolution of light detection: eco-physiological impacts on biodiversity, sustainability and health.**



## Evolution of the eye and vision

*(tunicates, hagfishes, lampreys, elasmobranchs, lungfish, reef teleosts, sea snakes, diving birds)*

- ✧ Evolution of image forming eyes
- ✧ Non-visual light detection: chronobiological influences on behaviour
- ✧ Visual ecology and behaviour
- ✧ Neural circuitry and retinal processing

## Eco-physiological impacts of vision and other senses on biodiversity

*(chimaerids, sawfish, sharks, rays, skates and teleosts)*

- ✧ Environmental influences on migration, aggregation, reproduction and feeding
- ✧ Sensory biology in the deep-sea
- ✧ Sensory sensitivity in elasmobranchs and deterrents
- ✧ Effects of pollution and light degradation on aquatic health

## Sensory approaches to improving aquaculture and fisheries management

*(barramundi, mulloway, yellowtail kingfish, zebrafish, lobster)*



- ✧ Importance of vision, olfaction and taste in the culture of finfish
- ✧ Chemoreception and feeding during the lobster lifecycle
- ✧ Use of electropositive metals in reducing bicatch (elasmobranchs)
- ✧ Environmental management strategies for endangered species

*Anatomy, electrophysiology, molecular genetics,  
behaviour, MRI, satellite tagging*

