A changing climate presents increasingly complex challenges with respect to water including quantity, quality, availability, allocation, uses, and significance as a habitat, resource and cultural medium. We explore the development of a Data Hub of Australian Research on Marine and Aquatic Ecocultures (Dharmae); a cross-disciplinary thematic collection (Palmer 2004) bringing together research data relating to water in all these forms. The term "ecoculture" (Pretty 2011) recognises that, since nature and culture are inextricably linked, there is a corresponding need for greater interconnectedness of the different knowledge systems applied to them. This concept guides: (1) Dharmae's collection development policy, which is intentionally multi-disciplinary; and (2) the way that the data hub supports discoverability by researchers from different knowledge domains.

Three data collections were described and ingested to seed Dharmae. The first is a partial data collection consisting of qualitative interview data from a project examining difficulties in implementing Marine Parks on Australia's east coast (Voyer 2014). It complements the second collection, from the "Talking Fish" oral history project (Frawley et al. 2012), in which inhabitants of the Murray Darling Basin (MDB) in Eastern Australia discuss their relationship to the river system and fishing. This was undertaken in a policy environment where water regulation had been controversially imposed, and participants included fishers, scientists, and indigenous Aboriginal peoples of the basin. These two projects arose from situations of (at least partial) policy failure and they highlight how even the best scientific evidence-based policy-making cannot afford to ignore the relevant, locally legitimate knowledge of stakeholders (Tengö et al. 2014). A third collection contains satellite remote sensing datasets showing vegetation indices and salinity profiles of catchments within the MDB in the decade leading up to the water reforms (Apps et al. 2009).

There is increasing recognition in the literature on environmental sustainability and global change research that it is not simply *more* knowledge that is needed to bring about transformative action, but rather *different types* of knowledge (Tabara and Chabay 2013). This paper reflects on the development of *Dharmae* through the lens of a "parallel multiple evidence base approach" as outlined by Tengö et al (2014). A guiding principle underlying *Dharmae* is one of respect for all disciplines and knowledge systems. Indigenous knowledge, for example, has developed over long periods of adapting to the changing

environment and may improve our capacity to interpret conditions, changes and responses in the dynamics of ecosystems (Tengo et al. 2014; cf. Reid et al. 2014). We contend that local, even anecdotal knowledge may provide clues or correlative evidence to science, support new hypotheses, or provoke new research questions. Conversely, scientific evidence, if it fails to account for cross-scale interactions, may not be a sufficient means to produce changes in local cultures. By collecting multi-disciplinary data and identifying facets on which data can be aligned, such as location or species, Dharmae aims to support more connected types of knowledge and to promote cross-disciplinary research enquiry.

References

Apps H.E., Cullen K., Halas L., Tan K.P., Pain C., Clarke J.D., Lawrie K.L., Gibson D., Brodie R.C., Wong V. (2009) River Murray Corridor Victorian AEM Mapping Project. Geoscience Australia, Canberra, ACT.

Frawley, J., Nichols, S., Goodall, H., Baker, L., 2012. Talking Fish - making connections with the rivers of the Murray-Darling Basin (Web Booklet Series). Viewed 22/3/2015 <http://www.dpi.nsw.gov.au/fisheries/habitat/publications/historical-accounts/talking-fish-in-the-murray-darling-basin>

Palmer Carole L. 2004, Ch. 24 "Thematic Research Collections", in: Schreibman, S., Siemens, R., Unsworth, J. (Eds.), "Companion to Digital Humanities (Blackwell Companions to Literature and Culture)", Blackwell Publishing Professional, Oxford.

Pretty, J., 2011. Interdisciplinary progress in approaches to address social-ecological and ecocultural systems. *Environmental Conservation* Vol. 38, No.131.

Reid, N, Nunn, Patrick, Sharpe, M. 2014. Indigenous Australian stories and sea-level change. Foundation for Endangered Languages; Proceedings of the 18th Conference of the Foundation for Endangered Languages / Heinrich, P Ostler, N (eds): pp.82-87

Tàbara, JD, & Chabay, I, 2013. Coupling Human Information and Knowledge Systems with social–ecological systems change: Reframing research, education, and policy for sustainability. *Environmental Science & Policy*, Vol. 28, pp. 71-81.

Tengö, M., Brondizio, E.S., Elmqvist, T., Malmer, P., Spierenburg, M., 2014. Connecting Diverse Knowledge Systems for Enhanced Ecosystem Governance: The Multiple Evidence Base Approach. AMBIO: *A Journal of the Human Environment.*Viewed 22/3/2015 at <http://link.springer.com/article/10.1007/s13280-014-0501-3/fulltext.html>

Voyer, M. 2014 Assessing the social acceptability of Marine Protected Areas (MPAs) - a comparison between Port Stephens-Great Lakes Marine Park (PSGLMP) and Batemans Marine Park (BMP) in NSW PhD thesis, University of Technology, Sydney, viewed 5 February 2014, <http://hdl.handle.net/10453/24210>