The final stages of the eel life cycle – a key role for androgen signalling?

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Freshwater eels are textbook examples of animals that undertake long-distance migrations to distant spawning locations. They prepare for their journey by extensive changes to their functional ecology and physiology, changes that have been likened to a metamorphic event. Ready access to migrating "silver" eels in southern New Zealand has provided us with ample opportunity to sample and/or experimentally manipulate these fish to gain insights of these pre-adaptive changes and the coinciding activation of the reproductive axis. Accordingly, the steroid 11-ketotestosterone was identified as the putative inducer of these changes. In addition, we have demonstrated that 11-ketotestosterone notably affects lipid biology in eels, resulting in lipid accumulation in the ovary – a finding that may have promise in experimental indication of maturation and modulation of egg quality.