Madeleine grew up in drought-stricken rural NSW, and this spurred her into pursuing a career in natural resources law.

She first started to research groundwater law during her Law Honours project at Macquarie University, Sydney; now, in her PhD at UWA, Madeleine broadly examines groundwater law for sustainability, through understanding the role that water use efficiency can play in achieving sustainable development of groundwater resources.

Madeleine’s PhD is supported by the National Centre for Groundwater Research and Training through a package, which also included a recent one-year stay as a visiting scholar at the Sturm College of Law in Denver, Colorado, to conduct an international case study for comparison with Australian water law.

Madeleine plans to submit her thesis in November 2013.
Governance and groundwater use efficiency in Western Australia: The Gnangara Mound
National Centre for Groundwater Research and Training

Cotton Research & Development Corporation Narrabri

Supervisors: A/P Alex Gardner (UWA); Professor Simon Young (UWA); Professor Tom I Romero II (SCOL, Colorado)
Outline

Regulating for WUE: context

Law of groundwater resources, WA

Regulating for WUE: toolbox approach

Regulated WUE framework v reality
Regulating for WUE: context

WUE for sustainable development

Irrigators

Population & climate drivers
Rights in Water and Irrigation Act 1914 (WA) (RiWI Act)

Rights of access

Conditions of use

Overall management
Useful Comparisons

2.5 ML = 1 Olympic swimming pool

50 ML (av. licence) = 20 OSP

500 ML (high use licence) = 200 OSP

Lettuce: 15 ML/ha = 3 crops

Strawberries: 7 ML/ha

Carrots: 12 ML/ha
Regulated WUE: a toolbox approach

Metering (licences <500ML/year)

Actual v speculative use (3 yrs non-use)

Trading ‘saved’ water

Water conservation/ efficiency plans (WCEP)

500 ML = x 200
Regulated WUE framework v WUE enforcement reality

Metering
(non-enforcement: 38% (low use); 17% (high use))

Actual v speculative use (14,700 ML unused v 2300 ML recouped)

Trading ‘saved’ water

Water conservation/ efficiency plans (9% implemented; 94% local gvt)
Best practice regulated WUE

Step 1: Metering
Step 2: Stakeholder awareness of policies
Step 3: Enforcement

= Water use efficiency for sustainable development
Gnangara Mound groundwater levels