

NCST Working Group on Digital Soil Assessment – Workplan (2011-12)

Key activity: Filling the major data gaps through Digital Soil Mapping for Australia (as per ACLEP workplan, 2009-14)

Outcomes:

- Participation at and support for the 5th Global Workshop on Digital Soil Mapping and ASSSI 2012 conference.
- DSA practitioners have access to an online resource for discovering the latest DSA activities & resources (tools, reports, papers, people, groups)
- The DSA Working Group has an online system and resource to facilitate collaboration on DSA activities
- A regular training program of DSA techniques, courses and technical workshops (including pilot project findings)
- Development of guidelines and manuals for DSA
- Facilitation, support and leadership in DSA collaborative projects

Rationale: Methods and approaches to DSA are being explored and tested to address both traditional and emerging user requirements for soil information (e.g. the need for soil attributes as parameters in climate change scenario modelling). DSA addresses a global need for current, accurate, spatially referenced soil information. This need has been expressed by the modelling community, natural resource managers, and policy and decision makers. The development of new technologies, techniques and methodologies for predicting soil attribute data has facilitated recent advances in the science. Gaps that currently exist in agricultural lands for critical soil attributes are a key focus of national programs including the Australian Collaborative Land Evaluation Program (ACLEP). This workplan (2011-12) has identified practical outcomes and activities to be facilitated and lead by the DSA Working Group to contribute towards delivery of the key activity.

Proposed outcome	Theme (facilitate/lead domain)	Described actions/deliverables	Person/s responsible	Deliverable (timeline and resourcing requirement)	Deliverable status/update (13/07/12)
Increased attendance at the 5 th Global Workshop on Digital Soil Mapping - Sydney 10-13 April 2012	Promotion of DSA techniques and methodologies across Australia	<ol style="list-style-type: none"> 1. Assist Sydney Uni to secure resources to support the workshop 2. Promote workshop through the ACLEP website and at state and territory level. 3. Secure a keynote speaker from Google Earth 4. Development of a post conference tour 5. Assist the Organising Committee as requested 	Budiman Minasny, Peter Wilson, Nathan Robinson, James Hall, Darren Kidd	<ol style="list-style-type: none"> 1. Approx \$10 -20,000 support from ACLEP required - ASAP by end June (state/territory support also to be identified by DSM WG members). Note \$2200 has been provided by DPIPWE (Tasmania). 2. Workshop flyer on ACLEP website by end March 3. PW to contact Google by end April 4. Suggestions of possible tours to Budi by end Dec 5. As required 	<ol style="list-style-type: none"> 1. Financial support was provided for the workshop from ACLEP, Tasmania, NSW and Victoria (other states and territories investigated options without success). COMPLETED 2. The workshop flyer was made available through the ACLEP website and was also distributed by Brian Jenkins as part of the Soils Community of Practice email distribution network. COMPLETED 3. Google was unable to provide a keynote speaker for the workshop. COMPLETED 4. Suggestions and support for a possible tour of Tasmania was flagged and provided as an option post the workshop, however this was not required as there was a low expression of interest to attend this from workshop registrations. COMPLETED
DSM practitioners have a online resource for discovering the latest DSM activities & resources (tools, reports, papers, people, groups etc.)	Promotion of DSA techniques and methodologies across Australia	<ol style="list-style-type: none"> 1. Scope of resource established 2. Web page developed and its management documented 3. Process established for web page support and upload of quality information / data 4. Population of initial content 5. Webpage published 	David Jacquier Jonathan Hopley Ted Griffin, Budiman Minasny Content population (review, acceptance) by broader group	<ol style="list-style-type: none"> 1. July 2011 2. Sept 2011 3. Sept 2011 4. Dec 2011 5. Dec 2011 	<ol style="list-style-type: none"> 1. Jonathan Hopley and David Jacquier have identified that the ACLEP website can host information and content on DSM that can be made available to a wider audience via the www. COMPLETED 2. Nathan Robinson and Jonathan Hopley have been working with the University of Ballarat on the possible hosting of a collaboration space as part of an e-research pilot study. A draft of the web content for the collaboration space will be distributed in the following 2-3 weeks for comment, review, testing and population by the advisory group. IN PROGRESS – to be completed by 31/08/12 3. As above. IN PROGRESS – to be completed by 31/08/12 4. As above. IN PROGRESS – to be completed by 31/08/12 5. As above. IN PROGRESS – to be completed by 31/08/12
The DSA Working Group has a mechanism to facilitate collaboration on WG activities	Promotion of DSA techniques and methodologies across Australia	<ol style="list-style-type: none"> 1. Env scan & selection of suitable (effective and efficient) online collaboration tools 2. Establish and manage secure access 3. Establish protocols for check-in and check out of material 4. Population of initial content 	Jonathan Hopley James Hall	<ol style="list-style-type: none"> 1. Search and Evaluate open source/freeware options (eg: Yahoo group) April 2011 2. Evaluate GoVDex tool. April 2011 3. Establish user needs and select solution 4. Establish user access and resource structure. May 2011 5. Disseminate user access and usage protocols. May 2011 6. Populate Content. July 2011 – June 2013 	<ol style="list-style-type: none"> 1. This is being investigated as part of the pilot collaborative workspace being formalized with the University of Ballarat e-research project. IN PROGRESS - – to be completed by 31/08/12 2. Unsure if this has been investigated? 3. As above – to be done as part of initial testing and review by advisory group members. IN PROGRESS – to be completed by 31/08/12 4. As above – to be done as part of initial testing and review by advisory group members. IN PROGRESS – to be completed by 31/08/12 5. As above – to be done as part of initial testing and review by advisory group members. IN PROGRESS – to be completed by 31/08/12 6. IN PROGRESS

DSA training, course/s, DSM pilot project findings/learnings, etc	<ol style="list-style-type: none"> 1. DSM workshop – review of pilot project/s (including training in priority areas) <ul style="list-style-type: none"> – Geostatistics – Soil sampling approaches – Geomorphology – Data modeling approaches and software (e.g. regression kriging, decision trees) 	Mark Thomas, Ted Griffin, John Wilford	<ol style="list-style-type: none"> 1. Support for a national DSM workshop to include review of pilot projects and training in specific disciplines. Approx \$10,000 support from ACLEP required - state/territory support also to be identified by DSM WG members) 	<ol style="list-style-type: none"> 1. Peter Wilson indicated that ACLEP resources were still being formalized and that the TERN DSA project could include a training workshop (to be discussed further with Mike). <ul style="list-style-type: none"> • Possible key training requirements include terrain analysis and data scaling, terrain derivatives, remote sensing and analysis methods, and how data links with spatial models; data mining approaches, geostatistics and covariates; and standardization of covariates. • A suggestion was that training seminars should be video recorded as this will enable group members to review further in light of their DSA applications/training post this training seminar. 	
Guidelines, manuals for DSM	<ol style="list-style-type: none"> 1. Plan for publication of the Orange Book 	Mark Thomas, Ted Griffin, John Wilford	<ol style="list-style-type: none"> 1. Draft outline of publication (Dec 2011). 2. Identify potential contributors (Sept 2011) 3. Identify funding sources (Sept 2011). 	<ol style="list-style-type: none"> 1. A draft outline of the orange book was provided by Mark Thomas and Raphael V-Rossel in Dec 2010. This will likely become an interim basis for a docbook collaborate workspace. COMPLETED 2. IN PROGRESS – this could be revisited as part of the establishment of a collaborative workspace 3. IN PROGRESS – this could be revisited as part of the establishment of a collaborative workspace 	
ASSSI 2012 conference – Tasmania	<ol style="list-style-type: none"> 1. Involvement in sessions regarding DSM 2. Integration of DSM into post conference tour/s 		<ol style="list-style-type: none"> 1. Darren to engage with Richard Doyle re NCST DSM WG involvement in chairing sessions. 2. As above 	<ol style="list-style-type: none"> 1. Darren has advised the group that there will be sessions at the conference. COMPLETED 2. Darren is hosting a tour as part of the conference. COMPLETED 	
<p>DSA collaborative projects:</p> <ol style="list-style-type: none"> a) Queensland DERM scientists learn a range of DSM skill and have the ability to apply them. b) Tasmania (Wealth from Water Pilot Program) c) Western Australia d) NT e) Victoria 	Supporting regional (state and territory) DSM projects	<ol style="list-style-type: none"> a1. Using DSM techniques, an analysis of the quality of the ASRIS derived soil nutrient surfaces being used in the GBR modeling work will be undertaken. a2. DSM techniques will be applied to generate a range of soil attribute estimates relating to soil erosion in the Burdekin catchment. The work will involve both field and desktop components. (Note – the delivery of this action is dependent on the success of a current funding application b1. DSM techniques will be applied to generate a range of soil attribute estimates including soil depth (depth to bedrock/ impeding layer), Clay content , pH , Organic Carbon , CEC, Available soil water capacity (pedo-transfer), EC, Bulk Density (pedo-transfer), and Stone Content 	Ross Searle/Jim Payne (QLD)	<ol style="list-style-type: none"> 1. July – December 2011 Resourcing - in kind QDERM. This will be a 2-year project starting July 2011. 2. Project is a joint partnership of DPIPWE, Sydney University and CSIRO (Resourcing – ACLEP, DPIPWE) 3. Project report updates to be submitted to the online collaboration space for the DSM WG. This will be a forerunner to a DSM seminar in 2012-13. 	<ol style="list-style-type: none"> 1. Jim flagged that the Burdekin and Flinders projects in Qld were progressing. ON-GOING 2. Tasmania Wealth from Water Pilot Program continues with joint investment from DPIPWE, University of Sydney and CSIRO (ACLEP). IN PROGRESS 3. Mark Thomas, James Hall, Jonathan Hopley and Nathan Robinson have continued discussions on a possible cross-border project between S. Australia and Victoria. IN PROGRESS 4. Project report updates to be submitted using a template provided by Peter Wilson. This content will be collated onto the ACLEP website and the collaboration workspace. IN PROGRESS 5. DPI Victoria is undertaking a statewide DSM project to update existing spatial hierarchies with soil information. This is occurring as part of the Understanding Soils and Farming Systems project. IN PROGRESS – to be completed by 30/06/14