

Citizen Science or Science Citizens? Transferring soil knowledge in the NSW Soil Knowledge Network

S. K. McInnes-Clarke^{1,3}, B. R. Jenkins^{2,3}, B. W. Murphy^{3,4} and A. Rawson^{3,5}

¹ NSW Office of Environment and Heritage, Gosford, NSW 2250 Australia sally.mcinnescclarke@environment.nsw.gov.au

² NSW Office of Environment and Heritage, Queanbeyan, NSW 2620 Australia brian.jenkins@environment.nsw.gov.au

³ NSW Soil Knowledge Network, Cowra, NSW 2794 Australia soil

⁴ Honorary Fellow, NSW Office of Environment and Heritage, Sydney, NSW 2000 Australia brian.amaroo@bigpond.com

⁵ Charles Sturt University, Orange, NSW 2800 Australia arawson@csu.edu.au

Introduction

The Soil Knowledge Network (SKN) is a group of 15 retired soil specialists from around NSW. We are a unique citizen group, in fact we think of ourselves as 'science citizens' and aim to transfer our knowledge to affect positive land management decisions and ultimately influence policy.

The SKN has several goals which we are working towards (for more information see www.nswskn.com). There are three which are of greatest importance for this paper –

1. To improve the public understanding of soils.
2. To capture and make digitally available hardcopy land and resource information that is currently difficult to find or unable to be accessed.
3. To mentor a new generation of land managers.

In this paper we reflect on our success as a group and also on our learning experiences. We consider notions of trust, credibility and the often under estimated importance of people in delivering positive outcomes. We evaluate the impact of the SKN on the public understanding of soils using qualitative examples from our activities and metrics from social media. Lastly, we explore opportunities for increasing engagement and participation in soil science.

Discussion

The diversity amongst SKN members is high and this is one of our greatest strengths. Several members have extensive experience in rangeland management, whilst others have strong backgrounds in the tablelands, coastal or alpine areas of NSW, Australia. Some of us have strong ties to education either as lecturers or teachers. Others are well experienced in soil and land assessment, farm planning, soil chemistry, soil health, geomorphology, soil research, soil test interpretation, soil policy and much more.

Since we began in 2013, the SKN has explored a range of communication platforms to share our excitement for soils. We have held workshops and field days targeting farmers, community groups and soil professionals (Figure 1). We have presented at national and international conferences, published educational videos, online resources, lobbied politicians and used social media to promote soil issues in public debate (Figure 2).



Figure 1: Technical soil workshop for soil professionals, Wellington, 2015 (credit: Sally McInnes-Clarke, OEH)



Figure 2: Teaching soil profile description in *Your Soils From Top to Bottom* (NSW SKN, 2014)

Conclusions

The SKN set out to raise the public awareness of the importance of soils. Results from our qualitative assessment of our activities over the last 4 years, feedback from our workshops and social media metrics indicate that we have done exactly that.

We have published online soil resources filling soil knowledge gaps but there is more to do in this space. We have promoted information sharing initiatives and provided access to valuable soil legacy information and policy documents – and enjoyed ourselves while we made a difference.

The SKN experience highlights a valuable, and in many ways essential, way to capture corporate knowledge and wisdom at a time when government agencies are no longer supporting soils extension activities nor supporting effective mentoring of new scientists. By appealing to the still active passion of recently retired scientists, we have helped ensure that soils in NSW are valued, and hopefully, managed well.

Keywords: citizen science, knowledge transfer, land management, mentoring.

References

McInnes-Clarke SK, Jenkins BR, Murphy BM, Rawson, A (In press). Citizen science making a difference: sharing soil knowledge and evaluating success in the NSW Soil Knowledge Network. *Soil Use and Management* Special Issue: Soil information sharing and knowledge building for sustainable soil use and management: problems and prospects for the 21st century.

NSW Soil Knowledge Network (2014). *Your soils from top to bottom*. NSW Soil Knowledge Network. Video file. Posted October 20 2014 <https://www.youtube.com/watch?v=OLnk65A7-Ps>

Session No.	Theme
	SOIL USE AND MANAGEMENT
22	Soils education and training: <i>From schools to Citizen Science to CPSS and CSAM</i>