

Strong Beginnings to a Bright Future: An introduction to papers from the 2011 Linnean Society of NSW Symposium on “Natural History of Royal National Park”

Natural History in the Royal National Park and the Need to Better Integrate Research into Park Management

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The study of national history in all its forms has been at the core of Royal National Park, one of the first national parks in the world, since its very beginnings in 1879. Along with the neighbouring Heathcote National Park, it has played an important part in the foundation of the conservation movement in Australia and the basis for national park management throughout the country. On 29-30 September 2011, the Linnean Society of NSW convened a symposium on the natural history of Royal National Park and its surrounds, bringing together a wealth of research on a broad spectrum of topics that reflect the diverse values and management issues of the area. As a prelude to the proceedings of the Symposium, I outline the challenges and opportunities facing managers and researchers alike. These include the need to clearly identify and prioritise issues and topics most in need of attention, constraints imposed by limited resources and utilisation of expertise and skills locally and willingly available. Also, I discuss some unique tools and techniques managers use to understand, utilise and implement recommendations from research undertaken in the Park every year. Finally, I look at where we can go from our current situation, to make better and more targeted use of research and experts to help shape the future of all parks. This includes how NSW National Parks and Wildlife Service (NPWS) can better connect, communicate and work with research organisations and individual experts and volunteers alike for the mutual betterment of the unique environment and heritage in Royal National Park, and make it a centre for nature history research.

INTRODUCTION

The ‘National Park’, or as it was to become known in 1955 the Royal National Park, has a long history as a place of research and education for both the natural science community and the general public. It also has played a pivotal role in the early development of the conservation movement in Australia since its proclamation in 1879.

For its size, the Royal National Park is one of the most biologically diverse parks in Australia. It adjoins the equally important reserves of Heathcote National Park and Garawarra State Conservation Area. It is linked by corridors of bushland to the Illawarra escarpment and west to the Blue Mountains and Dividing Range. Royal is also one of the most visited parks in NSW with more than three million visitors per year. It is also home to important indigenous and European heritage. Therefore, this presents

a significant challenge for managers who have to balance the needs of visitors and recreation with the conservation of biological diversity and maintaining historical and indigenous heritage.

As the second gazetted ‘national park’ in the world, Royal and the neighbouring Heathcote National Park are not only significant in being amongst the first of their type in the world (Heathcote was originally a protected ‘Primitive Area’ – a precursor to Wilderness Areas), but they also laid the foundations for the early conservation movement. The development of the conservation movement was fuelled by early attempts to log areas in the southern end of the Park by the very Trust set up to protect it. This resulted in one of the first community- and media-driven campaigns in the early 1900’s, a fore-runner to today’s community and scientific involvement in the management and future development of national parks and reserves across the country.

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When people consider why national parks exist and their importance, the perception is often only of recreation and conservation, they rarely link protected areas with research and other scientific endeavours. Yet, the everyday management of these parks is only possible if there is comprehensive research and monitoring of the park environment and a thorough knowledge of its diversity, heritage, surroundings and linkages.

Nearly every division of the natural sciences and history has been studied and researched in Royal, by the amateur and the professional, including students, volunteers and rangers. Yet, there is still so much more to investigate and monitor in the future. The study of all facets of natural history and science continues to be a core focus within NPWS. Particularly, as we face increased population levels, encroachment and resource pressures, impact of species loss and pests, climate change, and maintaining and enhancing the future relevance of national parks for the community and government.

However, we must ask what knowledge and information is needed to complete the picture for both scientists and managers? How do national parks work with researchers and other agencies to target and prioritise study in the areas that desperately need it?

THE CHALLENGE

So, how can natural history and related research, including the often sidelined areas of systematic monitoring and surveying, assist in supporting the future of the Royal National Park and other reserves? To some, the answer is clear; however, to many outside of the environmental sphere, it is either taken for granted that we are at the pinnacle of knowledge for most subjects or, worse, that it is a luxury in an economic sense or simply not necessary. Additionally, some sciences not traditionally associated with national parks, such as the social and behavioural sciences, are emerging as critical in our understanding of visitor use, the resulting impacts on the environment and heritage, how these can be modified, and how educational and interpretative resources (e.g. signage) can be improved upon.

This type of research is especially important, given the changing demographics of Australia and the range of cultures and belief systems that make up our modern society. Questions such as who uses the park and how different cultures use and view 'national parks' are vital to our management. Equally, the question of how to engage and integrate these cultural

diversities with conservation objectives presents a challenge to managers and researchers.

Identifying and pursuing research needs, supporting long-term monitoring and studies, and engaging with researchers, volunteers, retired scientists and other parts of the community is just the beginning. Equally important is identifying who to engage with and what subject or level of technicality or complexity is best suited to their abilities and interest.

To help facilitate research and other studies in Royal and elsewhere, the general aim of a manager, from my perspective at least, is to support and facilitate research that meets identified needs. Projects likely are to be a priority if they fully or partially meet the needs of management and policy, fill data gaps, and support new and promising techniques for controlling and mitigating impacts, such as pest species control and fire management. Other research that is primarily 'pure science' in its objectives, such as studying the variation of a species across a large geographical area, will always be supported, even though it may have indirect or limited outcomes for management or conservation of a specific element of the park. However, priority will tend to be given to the 'applied sciences' with direct links and implications for the Park and management. This approach or requirement also applies to the majority of research grant criteria and funding from government agencies and non-government organisations.

When one considers the multitude of issues and challenges in managing protected areas such as Royal National Park, the potential research subjects are many and varied. Some of the management imperatives include understanding the impact of neighbours, visitors and recreational activities, the distribution of pests and weeds and their interactions with threatened species, and protecting indigenous and early European heritage sites. This means that rangers and managers must work together with scientists to access, understand and then utilise and integrate scientific information into departmental policies and local management plans. Additionally, knowledge and observations of staff and the local community should be included to implement reasoned and realistic (and hopefully successful) actions on the ground.

The current Plan of Management (2000) for the Royal, Heathcote and Garawarra reserves states that "the purpose of scientific study in the park is to improve the understanding of its natural and cultural heritage and the processes which affect them. Research will also inform the requirements for the management of particular species. Data and findings

from research studies and surveys will be utilised in Park management.” These broad objectives, as well as many others in the plan and other management strategies, make it challenging to identify, prioritise and implement activities without considerable expert and technical guidance. Managers have been fortunate to gain guidance from both internal and external researchers and policy makers, but many areas may never get the attention or be prioritised by managers or universities.

Many of the challenges discussed can be addressed by improving links, communications and sharing knowledge with experts, and assessing and prioritising research topics. An updatable ‘Research Prospectus’ or similar document can articulate these shared needs and aspirations, utilising a variety of information types and sources. The big question then becomes - how can park and other land managers deal with a lack of resources, including funding, time and staff, to assist and facilitate researchers and make the most of their skills in benefiting the reserve in question?

TOOLS OF THE TRADE

To understand the challenges that park managers face in accessing and applying science ‘on the run’, it is important to consider the range of tools they utilise or access on a regular basis. Consideration also should be given to overcoming the challenge of deficient resources.

The ‘Calibrated Eyeball’ is generally overlooked and undervalued as a skill, being traditionally passed down the line from experienced rangers and other land managers to give a ‘first-pass’ assessment of a range of environmental and other values and their condition. While not a replacement for expert guidance and research, it is invaluable to the manager and scientist alike. It is the combination of experience, gained knowledge and judgement. This ability began in an era where you learnt on the job and stayed in a role for life, thus enabling you to observe the passing of time and observe the environment and its dynamic nature over decades of change, e.g. peaks and troughs, boom and bust. Sadly, due to the dynamic nature of the current workforce this skill is becoming a rare commodity.

The use of existing internal policies and plans, such as the current Plan of Management for the Royal reserves, and NPWS’s Parks Management and Policy Manuals, are invaluable. Their strength lies in being able to distil and combine science and legislation - including social, economic and

management considerations - into a policy direction or recommendation for strategic and general park planning.

Other tools utilised to varying degrees across parks include the various ways of accessing past scientific reports and data, such as databases and information systems (i.e. the Wildlife Atlas and the two heritage information systems), and a broad range of ‘grey’ or internally-developed or unpublished literature and published reports, maps and reference texts. To ensure that actions are clearly identified and implemented, various land managers utilise multi-theme risk assessment and prioritisation tools such as Environmental Management Systems (EMS) and Asset Management Systems.

Gatherings of experts, interested individuals and park managers, such as the Linnean Society’s Symposium on Natural History in Royal, are priceless and immensely valuable in both career and knowledge development for parks staff, but also as a networking and knowledge sharing experience for all involved. Additionally, working groups and workshops for specific issues (i.e. feral deer management) pull together the various experts, policy makers and local land managers and stakeholders to solve sometimes complex and sensitive issues. Volunteers, local environmental consultants and historic community links and knowledge also aid park managers in finding the right information and exploring what has been tried in the past for many issues.

Many of the authors in these proceedings fit into that all important category of regular long-term and environmentally concerned researchers. Some have been a key part of the Park for many decades, whereas others are retired scientists or self-taught experts whose long-term observed knowledge is of incalculable value.

WHERE TO FROM HERE

Clearly from this discussion, the need to support and improve existing relationships and ties among park managers and researchers of all disciplines, and to seek and form new links, is of highest priority. Forming closer relationships with a range of experts, improving and facilitating ties with universities and research organisations can greatly benefit all partners involved by promoting the common ethic of “what can we do for each other?” Current experts that freely provide advice and their time to the Park are of immense value to the park managers. Often we can only hope that the decisions and actions taken by park managers reflect the energy expended by the experts.

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Acknowledging the diverse range of knowledge and how it was gained is also important. Valuing and working better with volunteers, 'twitchers', and never-fully-retired academics is something that rangers and managers always attempt to achieve.

The current development of the 'Royal Research and Project Prospectus' has been a valuable outcome of the Symposium. It draws from all the speakers and topics raised, with the intention that the prospectus will go to all universities and other research institutes as well as to independent experts and internal scientists to promote research activity that will help resolve the most pressing knowledge gaps.

Another idea raised and discussed at the Symposium was re-invigorating the Park as a centre for interaction between researchers, topic experts and volunteers. Having a 'Residency' for active researchers in the park for various periods of time harks back to the days of the National Park 'scientist's cabins' in the late 1800's. The opportunities to make Royal a centre for research and outdoor learning with a dedicated facility is an attractive one. Core to achieving this and the other essential objectives detailed in these proceedings is to have a comprehensive and clear Plan of Management for the reserve that pulls together and reviews previous management strategies, community input, current research, departmental policies and local management practices and tools to achieve the overall environmental and heritage conservation goals. One of the key areas that a plan must address is what and how to best monitor the myriad of human and non-human impacts, environmental variables, and the success and effectiveness, of the plan of management itself.

Finally, the success or failure of the ideas and aims expressed in this paper relies on the NPWS and researchers having an open door and an open mind. This means thinking outside the box when looking for unique and integrated solutions to management issues, working in multi-disciplinary groups to gain and share both knowledge and skills, and to create opportunities and efficiencies necessary in present social and economic times. We need to continue to work and communicate with each other for the mutual benefit of managers, researchers, visitors and most importantly the environment. Royal National Park has the potential be a future centre for demonstrating the integration and application of research and science with on-ground management and practices to government, other land managers and the broader community.

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