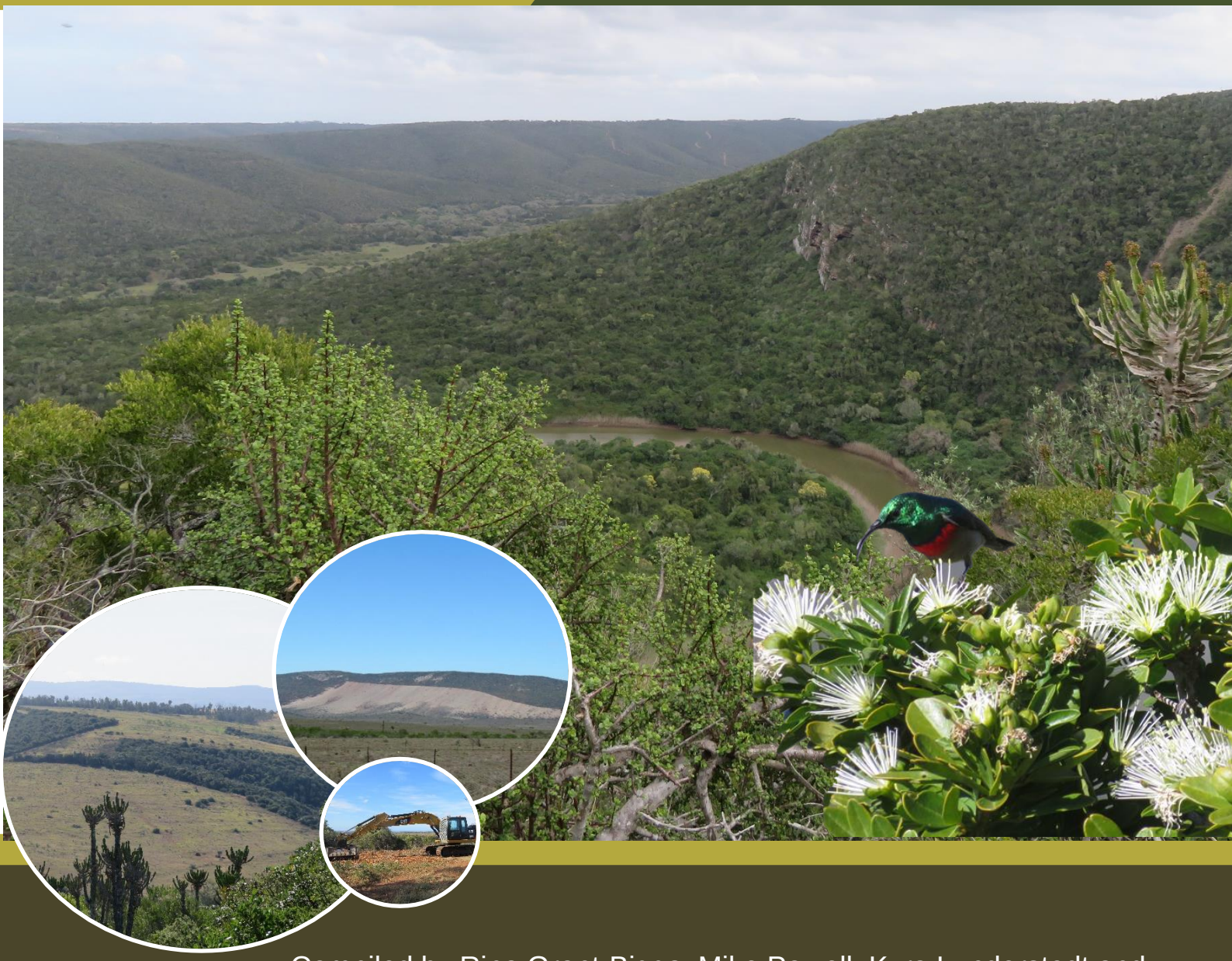
ALBANY THICKET RESEARCH FRAMEWORK MEETING

Workshop Proceedings

Developing a research framework for thicket, it's restoration and related praxis



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Contents

WORKSHOP PROCEEDINGS
Developing a research framework for thicket, it's restoration and related praxis

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We wish to thank the attendees of the Albany Thicket Research Framework Meetings for their valuable contributions. (Appendix 1).

BACKGROUND

Through funding from the Department of Environmental Affairs, Chief Directorate: Natural Resource Management (DEA: NRM), the Rhodes Restoration Research Group (RRRG) of the Department of Environmental Science at Rhodes University, arranged a facilitated workshop with the objective of developing a research framework that could guide future research and praxis towards sustainable use and restoration of the Albany Thicket.

METHODOLOGY

Current knowledge and practice was used as a basic framework to guide future research to address identified gaps in the knowledge needed to help attain goals toward thicket management and concerns regarding degradation and restoration more effectively. The framework developed highlights needs for facilitating the implementation of research outcomes to manage and restore thicket.

At the workshop a goal-setting approach was used as described for the adaptive planning phase of strategic adaptive management (see references as given). The goal-setting exercise was for the research and praxis system, recognising that this served a broader thicket restoration and management vision which was sketched out. Because of time restrictions the V-STEEP part of the process was carried out by selected persons for each of the V-STEEP categories (Values, Social context, Technology, Environment, Economic, Political and Legal/Regulatory) concurrently on the basis of discussions and the introductory talks and discussions. These inputs were used in the goal-setting process.

A key question was on what societal basis are we conducting research and improving praxis? Here, the communities or stakeholders that would benefit from improving ecosystems services in the thicket were listed as:

- Straight conservationists and conservation bodies
- Private landowners and
- Communal residents

It was agreed that the 'thicket' addressed here should be broadly defined through three main characteristics:

- Has similar characteristics to thicket in international forest classifications
- The absence of a continuous grass cover, where the vegetation is older than grasslands
- Where succulents form an important part of the biodiversity, especially in the Albany Thicket.

Therefore, a probable definition could be: 'an ancient forest-like vegetation type in ~~it's~~ mesic form, without a continuous grass cover and with high succulent biodiversity, increasing with aridity'.

We followed the VSTEEP process to agree on a common basis to discuss research needs. To address the objective of the meeting it was necessary to define what was understood by thicket and obtain a short overview of current knowledge and concerns. Experts and practitioners were therefore invited to highlight the state of knowledge as well as research questions that need to be addressed within their field of expertise or praxis. (See appendix 1 of agenda and speakers).

OUTCOMES

Research axes

There are six axes that can guide research:

1. Locational axis

- Why is this different from there?
- What is the evolutionary history?
- Has there been long exposure to megaherbivores?
- Lack of fire exposure

2. Climate-geomorphic axis

- Changes in thicket between summer and winter rainfall along an aridity gradient.
- Influences of geology and geomorphology on vegetation structure and composition.

3. Fine-scale axis

- Interactions and consequences to vegetation at these scales.

4. Cultural axis

- Influence of the oldest evidence of modern humans, with a colonial history of contestation and commonality.

5. Dynamic axis

- Acknowledgement of the change taking place in the system and how the system is adapting and innovating

6. Social ecological systems (SES) axis

- Acknowledge land reform and understand the role players.

Goals

The workshop lead to the formation of two main goals, an ultimate goal and an immediate goal:

Ultimate goal – Recognising the dynamic nature of social-ecological systems, to restore, slow down and where possible avoid undesirable transformation, change or degradation in thicket, and yet concurrently improve associated human and social capital.

> *Note: even in a business-as usual scenario, achieving this goal to any appreciable extent will be challenging, and require inspired thinking and action across a range of domains. In a bleaker scenario where undesirable transformation becomes rampant, we may land up on the back foot trying to find novel ways of transitioning into system states where thicket can at least still exist in patches in some viable ways. An unlikely converse scenario (where for instance, most of the thicket biome is bought up with say, international conservation funds) may promote thicket retention in the medium term but lead to other issues of sustainability.*

Immediate goal –to formulate a research and praxis program in support of the ultimate goal.

There should be ongoing achievement toward the ultimate goal, to prove that praxis is taking place and is already in effect. The *immediate system of interest* here includes universities, partners, practitioners, residents, NGO administrators etc., who are resident and functional in and around the *ultimate system of interest*.

Vital attributes

The vital attributes of the immediate system of interest, for the immediate goal can be summarized in Table 1.

Table 1: Vital attributes of the *immediate system of interest*.

Attribute	What determines/strengthens this?	What weakens/threatens this?
1. Current functioning and further potential of an "open laboratory"	Universities, research-friendly and well chosen field sites, good collaboration and track records.	Discord between partners, research fatigue at field sites, distance to the Eastern Cape for visiting researchers.
2. Encouraging levels of human and social capital; and multiple, working rehabilitation programs	Response to poverty and degradation levels. Available rehabilitation and SLM funding for such purposes. An ability to attract grants.	Difficulties in government, university administration, and overall financial supply chain systems supporting projects and development.
3. Sometimes healthy and potentially healthy science-management and science-policy partnerships	Long history of association in rehabilitation projects and responsiveness of some Eastern Cape institutions. Working examples of good praxis relationships and of diagnosing and co-constructing response to land use challenges.	Discord between partners.
4. Tractability of prototype	Area and players sufficiently tightly knit.	
5. Appropriate mind-set and approach	Appreciation of ongoing change, uncertainty, multiscale, multi-use SES landscape, value sensitivity, high heterogeneity over small scales, history as starting condition. Appreciation of complexity and resilience.	Rigid linear mind-sets.
6. Understanding of our current and future land users and uses	Exposure of players to social heterogeneity and differing relationships within the landscape. Experience with land users with trust built in certain areas.	"One-size-fits-all" mind-set. Distrust especially between land users and others.
7. Appreciation of cultural variation and its depth		
8. Ability to understand major drivers	Multifactorial approach to SES genesis and evolution.	Simplistic "single cause" approaches.
9. Recognition of importance of basic information e.g. collections, baseline monitoring, technical databases.	Inculcated attitude of many participating stakeholders.	Lack of support or mobilization for this in their institutions and society.
10. Harmonise regulatory and legal environment	Awareness of contention for instance between CARA and NEMBA; keen enforcement.	Silo operations of departments; poor enforcement.

SUMMARY AND KEY TO HIGH-LEVEL OBJECTIVES

Develop a thorough understanding of the Albany Thicket, *especially as a social-ecological system.* 1

Strengthen ability to function as an "open laboratory", and develop, manage and reasonably guarantee effective partnerships. This based on appropriate mutual understanding and co-construction, with the full array of players needed. 2

Support appropriate attitudes to achieve the immediate and ultimate goals. 3

Investigate scientific and legal constructs and their contradictions. Such as classification and imposed boundaries versus CARA and NEMBA and to what extent these promote or act as barriers to the immediate and ultimate goal. 4

Develop an overall integrated strategy for praxis and restoration in thicket, including prioritization and pragmatic approaches. 5

Applied research –Triage, alien vegetation control, spekboom planting strategies, remote sensing and indigenous knowledge. 6

KEY:

1.1 Sub-objective 1 of high-level objective 1

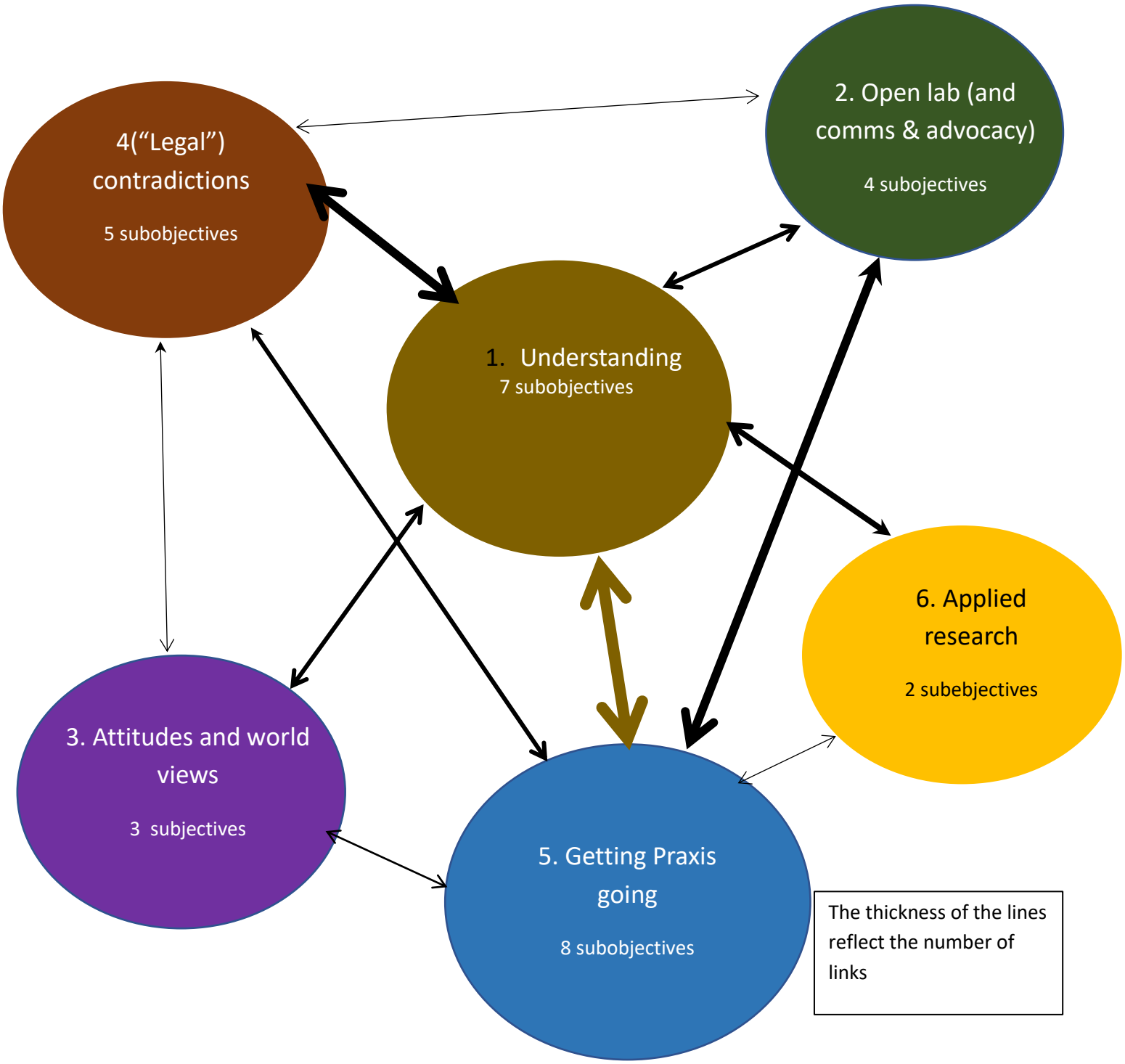
1.1.1 Sub-objective 1 of sub-objective 1

1 Key question/objective 1 of above.

1.3.2.1 Indicates objectives that are linked.

12, 54 Indicates the listed reference (from the thicket library) that addresses an objective.

The extent of links between the high level objectives to attain the Immediate goal which is: to formulate a research and praxis program in support of the ultimate goal in such a way as to produce a joint desirable "sustainable "social ecological system.



BREAKDOWN OF HIGH-LEVEL OBJECTIVES

1

DEVELOP A THOROUGH UNDERSTANDING OF THE ALBANY THICKET

Understand the ultimate system of interest through: understanding the state of degradation, major drivers of degradation, human livelihoods and ecosystem service interactions, understand cultural attitudes to land management, prioritise and collect basic information and collect the missing basic information, ascertain the relative influence of climate change and how to embed responses widely in research programs and resultant practice.

1.1 SYSTEM DEFINTITION

7, 9, 26, 27, 29, 35, 50, 55, 62, 81, 82, 83, 87, 108, 112, 121, 128, 130, 139, 166, 168, 171, 177, 196, 197, 198, 199, 203, 237, 241, 216, 218, 222, 260, 261, 266, 267, 268, 275

1.1.1 Classification

4.1.1

1. Understand thicket and describe and agree upon the different thicket types.
2. Define pristine thicket vs intact thicket.
3. Define the historical vs current thicket boundary with the understanding that it is porous and that the requirements for ecology and legislation differ. 140
4. Describe the determinants and extent of different thicket types.
5. Understand how dynamic and persistent each thicket type is as different stable states and the causes of state change. What maintains these states and how does succession take place e.g. what is the role of *V. karroo* and grass succession?
6. How is thicket establishment affected by the initial status of the vegetation?
7. Determine whether thicket is a critically endangered biome.
8. Determine the minimal conservation size for a thicket patch. 5.2.2
9. Determine the recovery dynamics of thicket once disturbed. 5.2.2

86, 124, 202, 217, 282

1.1.2 Understand the ecophysiology of the thicket

1. Understand the difference between obligate and facultative CAM species.
2. Understand the shade tolerance of different thicket species.
3. Understand the susceptibility of the thicket to succulent invaders. 6.2
4. Determine how unique this thicket is as a vegetation type.
5. Understand the ecology of thicket pioneers – what allows them to invade and transform grasslands

61, 74, 210

1.1.4 Understand the effect of Climate Change

1.3.2.1

1.1.2.1

1. Understand how the thicket will respond to climate change.
2. How will different CAM species respond to climate change?
3. Determine the role of protected areas in adaptation to climate change.
4. Investigate how the thicket responds to increased CO_2.
5. Develop scenarios to cope with future climate change.

1.1.3 Understand the paleo history and evolution

1. Use paleo studies to determine the extent of the thicket and what the original patches were characterised by.
2. Understand the evolutionary history and extent of thicket and its role in endemism, including the role of fire and herbivores.
3. Understand the timeline of historical and future change in thicket.
4. Investigate the use of paleo ecology to look at long term regime shifts.

3.2 SOCIAL- ECOLOGICAL SYSTEMS, LAND-USE, ECONOMICS AND RESILIENCE

10, 12, 14, 49, 68, 73, 104, 105, 107, 110, 278

262

1.2.7 Understand the overarching SES relevant to degradation and the prevention thereof

1.5.1
2.1.1.1

1.2.1 Define the Albany thicket as a socio-ecological system

22, 46, 60, 133, 134, 170, 191, 197, 207, 208, 209, 242

1.2.2 Understand the land users and land use systems in the thicket

2.1

143

2.1

1.2.6 Understand the links between land tenure and land use including communal vs commercial farming areas

38, 39

2.1

1.2.3 Identify the leverage points where you can influence the system

1.2.5 Understand the economics of existence and related decision-making

195, 235, 244

1.2.4 Understand the state of knowledge of different land uses and their economic value

1.3.2.2

1.3 DRIVERS

3, 8, 11, 15, 19, 30, 31, 33, 34, 40,42, 51, 52, 63, 77, 79, 92, 94, 99, 103, 115, 117, 118, 120, 123, 127, 131, 139, 146 148, 152, 153, 161, 167, 169, 178, 186, 187, 188, 189, 193, 194, 224, 225, 228, 233, 234, 245, 279

1.3.1 Ecological

1. Understand the key drivers and their feedbacks at different scales e.g. fire and herbivory.
2. Understand the impact of herbivores at different spatial scales and on different vegetation types.
3. Understand the effect of water provision in the thicket biome e.g. waterholes.
4. Understand the role of grazers and browsers in the thicket.
5. Understand the historic role of these species in the system and how the system changed since mega-herbivores were exterminated at the turn of the century.
6. Understand large herbivore dynamics in thicket-grassland-Karoo matrixes.
7. Understand ecosystem services provided by large herbivores in thicket systems. Who are the seed dispersers, ecosystem engineers etc. Which species maintains thicket and which ones changes it into a different state and under what conditions.
8. Understand the role of large carnivores in changing/maintaining systems. Potential trophic cascades?
9. The effect of domestic stock on thicket ecosystem function. 5.2.1

57, 84, 85, 269, 277

1.3.2 Social

1.2

1.1.4

1. Determine the possible impact of global change drivers on thicket (and other areas of concern) and associated mitigation and adaptive strategies.
2. Understand the economic drivers of land-use in thicket; what is the economic advantages of different types of land uses and their combinations? 5.2.2 1.2.4
3. Understand the balance between mining and sustaining resources in the thicket.
4. Understand the resource economics of the thicket. 5.2.2 1.2.4

1.4 SYSTEM FUNCTION AND ECOSYSTEM SERVICES

6, 84, 89, 90, 91, 101, 162

1.4.1 Determine criteria to decide what has to be saved and what can be sacrificed to realistically maintain a functional thicket biome

1. Investigate the green/wildlife economic opportunities that thicket can contribute towards and how to grow that.

5.2.2

1.4.9 Understand the connectivity corridor width and patch size between thicket patches needed to preserve the thicket

1.1.1
5.2.1

1.4.8 Understand the ecological infrastructure and ecosystem services of the thicket biome and the related limitations to human well-being, e.g., water supply

1.2

1.4.3 Understand the balance of thicket to cleared patches needed to maintain thicket function

1

1.4.7 Understand how soil in degraded areas have changed and how to recover soil processes

6.1.2

5.2.2

1.4.2 Understand the difference in function in areas with intact thicket

32, 122, 129, 134, 137, 150, 151, 152, 155, 157, 173, 192, 213, 214, 215, 200, 230, 232, 254

1.4.4 Understand the ecosystem services rendered by thicket and the patch size needed to render the services

1.4.6 Determine what the water resources are and how they can be made sustainable

1.4.5 Assess the importance of different thicket types for the catchment

1.5 DEGRADATION & RESTORATION

48, 88, 94, 102, 119, 123, 125, 132, 145, 147, 154, 163, 172, 184, 219, 231

1.2.1

1.5.1 Degradation- it's causes and extent and how it can be avoided

4.5.2

1. The status and rate of degradation and transformation.

5.2.2

2. How can degradation of the thicket be avoided without compromising economics?
3. Understand how degradation is perceived with special emphasis on the occurrence of *V. karroo.*

1.3.1

4. What is the role of herbivores and fire in degrading thicket?
5. Develop a framework and key strategies to avoid degradation in the future.

5.2.2

6. Understand the relationship between degradation and pollinators.

1.6

2, 17, 43, 72, 75, 76, 78, 110, 144, 149, 155, 157, 158, 159, 160, 165, 173, 179, 201, 248, 252, 253, 255, 257, 265, 271, 273

1.5.2 Rehabilitation & restoration

6.1.1

1. The way forward with restoration and rehabilitation and the role of conservation and stewardship areas.
2. Understand the mechanisms and outcomes of restoration vs rehabilitation.
3. Establish the criteria to determine whether areas of land are rehabilitating towards forest.

1.5.2.1

4. Synthesize our current understanding of restoration recipes for degraded areas.

6.1.2

5. How should succulents removed from cleared areas be re-established?
6. Determine whether spekboom is as ideal a plant for C capture as claimed?
7. Determine the characteristics of naturalising forest.

1.6 UNDERSTAND BIODIVERSITY RELATED TO THE THICKET

5, 13, 16, 20, 21. 23, 25, 28, 31, 41, 45, 47, 56, 59, 60, 65, 66, 67, 69, 71, 80, 83, 84, 92, 95, 96, 116, 126, 135, 138, 142, 176, 182, 185, 186, 189, 190, 204, 205, 206, 220, 223, 224, 225, 246, 263, 272, 274, 276, 280, 281

1.6.1 Improve our knowledge of species distribution patterns in the different thicket types

1. Understand the distribution and occurrence of succulents in the thicket.
2. Conservation priorities within thicket biome – which patches are exceptionally biodiverse and need specific protection.
3. Which criteria should be used to prioritise thicket areas for protection.
4. Document biodiversity at a landscape scale to guide agricultural development.
5. What are the effects of declining forest and thicket on functional diversity and at what densities do losses occur?
6. Which factors underlie the species composition pattern; how do they respond to disturbance.

5.2.2

4, 97, 109, 111, 113, 114, 161

1.6.2 Document biodiversity at a landscape scale to guide agricultural development

1. Understand biodiversity to support spatial planning by municipalities and provincial institutions.

227

1.5.1.6

1.6.4 What are the biodiversity benefits of re-establishing thicket

1.5.2

1.6.3 Identify thicket pioneers that can move into grasslands

1.7 ENABLE THE ACHIEVEMENT OF THE UNDERSTANDING OBJECTIVES

1.7.1 Create funding opportunities

2

STRENGTHEN ABILITY TO FUNCTION AS AN "OPEN LABORATORY"

Involves funders, policy bureaucrats, implementing officials, NGO's, residents, scientists. This requires internal and external communications, as well as advocacy, including stewardship.

175

2.1 PROMOTE AN UNDERSTANDING OF KEY PROBLEMS IN ESTABLISHING GOOD RELATIONSHIPS & SOLUTIONS

2.1.1 Develop a system of diagnosing and defining problems

1. Understand the balance of biodiversity, agricultural and social needs in the various landscapes. (1.2.1, 5.2.2.1)
2. Understand the links between restoring thicket and restoring human and social capital.
3. Understand how to maintain environmental and social sustainability.

2.1.2 Understand stakeholders and their economic aims

1.2.5

1. Understand the utilitarian, cultural and social values wrt species and thicket.
2. Determine how economic outcomes and thicket functionality can be optimized.
3. How do we shift values, rules and knowledge within these types of land use?
4. Investigate how to respond realistically and practically to improve poor relationships.
5. Understand the major drivers across different temporal and spatial scales in terms of economic and other challenges.
6. How can communities be supported to develop economically; what background information is needed to support this e.g. livestock numbers, sales, etc.
7. Case studies: land owners who go bankrupt or struggle vs those that make a success in the thicket.

2.1.3 Improve relationships between researchers and institutions

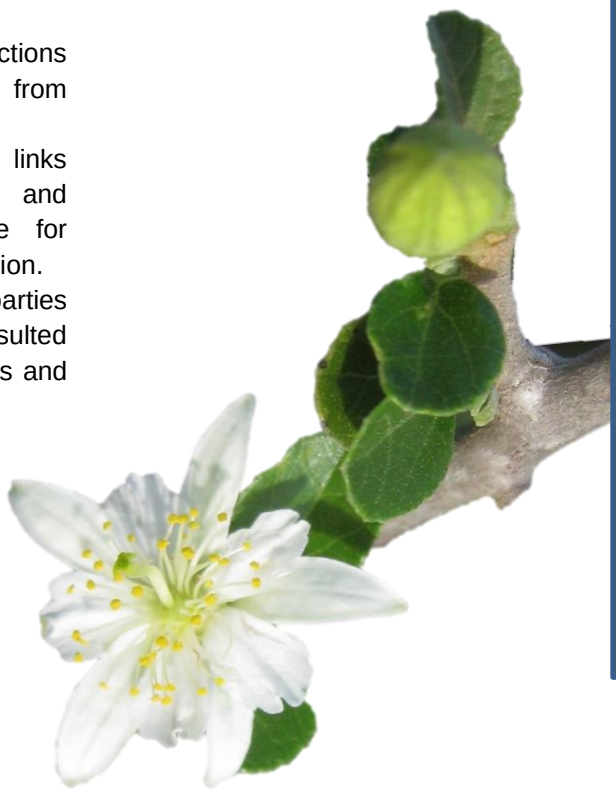
1. Promote participation in research from the four academic institutions in the thicket.
2. Identify silos and actions needed to move away from them.
3. Identify and develop links between institutions and communities of practice for research and implementation.
4. Identify and engage all parties that need to be consulted regarding land use options and restrictions.

54, 141

2.1.4 Improve relationships

5.2.2

1. Work towards a community that relates to each other.
2. Develop forums for open discussions.
3. Understand and foster cooperation, especially with the agricultural sector.
4. Identify important relationships that need to be developed.
5. Understand the issues around the conservation vs land use debate and how best to address them.



2.2 COMMUNICATION & CO-CHANGING ATTITUDES

2.2.1 Develop a strategy to co-change attitudes

5.2.1

1. Understand what mechanisms and institutions can be used to make stakeholders more aware of the value of natural resources, specifically the thicket?
2. Develop tools, models and mechanisms to effect change in attitude.
3. Develop an awareness campaign of the value of the thicket both in the cultural and biodiversity domains.
4. Understand how behaviour and values shift and develop such knowledge – use pathways to illustrate impact of different decisions.

5.5

2.2.2 Improving communication and understanding with improved knowledge and information

5.5

1. Develop a central database for data storage that will be readily accessible to all stakeholders.
2. Develop systems to support stakeholders in understanding differences between encroachment and intact thicket.
3. Understand how reporting can be made more accessible to other stakeholders.
4. Investigate how people can be aided in making decisions in spite of uncertainties.

5.3

2.3 DEVELOP SUPPORT MECHANISMS FOR EXISTING THICKET AREAS

2.3.1 Supporting institutions

1. Develop stewardship models as applied to the thicket context.
2. Develop mechanisms to support ECPTA in this role.
3. Determine how we can get evidence based data on efficient offsets.

2.3.2 Supporting tourism

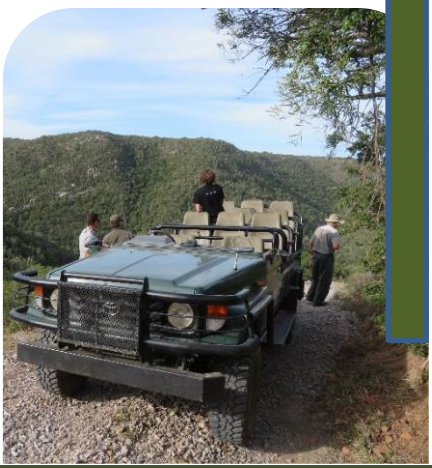
1. Understand how best the rich history of a hundred years of conflict and warfare can be used to promote cultural tourism.
2. Understand the economic and social needs of tourists and tourism providers in the thicket.

2.4 BUILDING CAPACITY

2.4.1 Develop an overall support for capacity development

4.5

1. Elevate the importance for thicket research and capacity development in the thicket.
2. Understand what and where the research capacity is, in the various universities, state institutions etc.
3. Understand the research capacity that is needed, and sources of funding student training develop principles of prioritisation i.e., triage.
4. Develop capacity in remote sensing.



3 SUPPORT APPROPRIATE ATTITUDES TO ACHIEVE IMMEDIATE AND ULTIMATE GOALS

Promote systems thinking and sensitivity for different value systems (taking current political context into account). This includes multi scale approaches in these multi-use landscapes and an understanding of how novel eco-systems are perceived. Pragmatic tradeoffs and realistic goals should be understood in achieving overall SES goals.

3.1 GLOBAL PERSPECTIVE ON CHANGE

4.4

1.2

3.1.1 Understand how the socially unstable Anthropocene will influence the ecological systems and vice versa

3.1.2 Learn from international institutions how to deal with socio-legal issues of changing ecological boundaries to address social needs

1.2

5.3

3.2 RESILIENCE

3.2.1 Identify factors needed to improve the resilience of the system

3.3 ECONOMICS AND SUSTAINABILITY

5.2.1

3.3.1 Understand how to maintain environmental and social sustainability

1. Compare commercial, traditional and conservation areas in terms of sustainable utilization.

5.2.2

3.3.3 Understand money flows taking place during ownership changes in the thicket with the view to its influence on the future desired state

5.2.1

3.3.2 Understand how communities can be supported to develop economically. What background information is needed to support this e.g., livestock numbers and sales

4

INVESTIGATE SCIENTIFIC AND LEGAL CONSTRUCTS, ESPECIALLY THEIR CURRENT CONTRADICTIONS

Investigate scientific (e.g. classification systems, imposed boundaries) and Legal constructs (e.g. CARA and NEMBA), the disconnects and contradictions between them, and to what extent do these promote or act as barriers to immediate and ultimate goals.

1.3.3
1.1

4.1 UNDERSTAND THE ROLE AND IMPLICATIONS OF LEGAL BOUNDARIES SET BY LAND CLASSIFICATION.

37

1.1.1

4.1.1 Understand the conservation priorities within the thicket biome such as which patches are exceptionally biodiverse and need specific protection

1. Define the criteria that should be used to prioritise areas for protection.
2. Pilot a methodology for declaring some thicket patches as protected areas under the forest act.
3. Develop protocols to help with the identification of different types of thicket.

5.3

4. Prioritise areas for conservation and communicate with the farming communities involved.

5.3

5. Re-examine how important species and areas are defined by including a wider stakeholder group, such as farmers and communities.

4.1.2 Do fine scale mapping of threatened areas

1.1

1. Using Sundays thicket as a priority set, new targets for priority thicket areas.

1.1

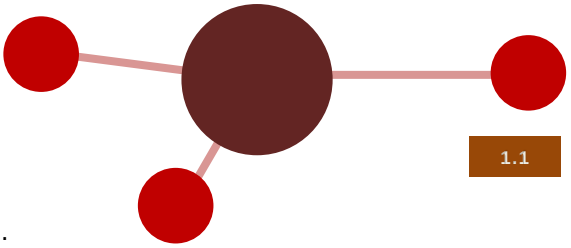
2. Map and protect sacred areas such as in the Sunday's Thicket legally and set new targets.

4.2 UNDERSTAND AND ADDRESS THE CONTRADICTIONS IN ESPECIALLY AGRICULTURAL AND CONSERVATION LAWS AND HOW THEY CAN BE OVERCOME

4.2.1 Understand the aims of the different legal systems governing land use in the thicket: CARA, NEMBA, NEMA and protected species

5.2.1

1. Develop mechanisms to support regulators as well as agriculturalists.
2. Understand how agricultural and conservation laws and land issues overlap and contradict each other.
3. Understand the need to engage with the legal system to address concern around thicket conservation and land use.
4. Understand the balance between regulators and agricultural producers.
5. Determine how commercial harvesting of forest and thicket can be controlled legally.



4.2.2 Understand the restrictions on land use in natural and changed systems in the thicket according to the different laws

2.3.2

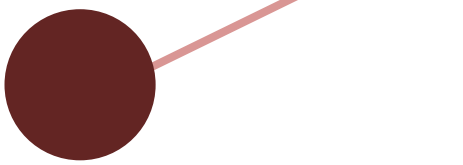
1. Understand the legal restrictions on consumptive use in the thicket.
2. Determine how existing regulations affect tourism potential.
3. Understand the restrictions on extralimital species and its consequences.

1.1

4.2.3 Understand how the contradictions in the laws can be overcome

1. Understand the restrictions on firebreaks.
2. Understand the restrictions on clearing areas with bush encroachment.
3. Understand the restrictions on clearing of the original thicket.

4.3 DEVELOP LEGAL INCENTIVES FOR LAND OWNERS FOR CONSERVATION OF THICKET



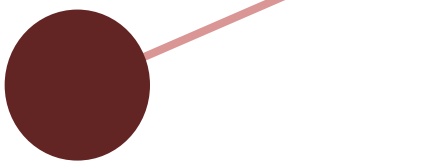
4.3.1 Understand which funding opportunities can be developed or exist

4.3.2 Develop evidence-based data on efficient offsets

4.3.3 Develop a mechanism to allow effective peer review of developing legislation

3.1

4.4 UNDERSTAND THE INTERNATIONAL AGREED ON TREATIES FOR REHABILITATION



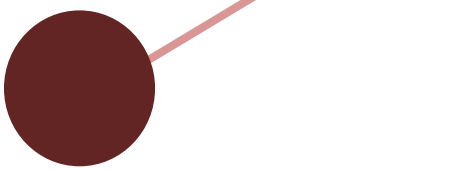
4.4.1 What are the implications of international treaties on thicket conservation and land use and how we can align with these?

4.4.2 Understand how thicket strategy is embedded in national strategies

36, 117, 136, 140, 147, 172, 174, 180, 181, 226, 240, 247, 251, 264

4.5 MONITORING ACTIVITIES IN THE THICKET

2.4



4.5.1 Develop assessment protocols where farmers and communities can co-create legislation

4.5.2 Understand the rates of habitat change by examining change regularly

1.5.1.1

4.5.3 Develop a peer-review and public legitimised system to help identify unacceptable gradual changes in the thicket

5 ENABLE AN OVERALL INTEGRATED STRATEGY FOR PRAXIS AND RESTORATION IN THICKET

5.1 IDENTIFY A LEADER TO IMPLEMENT PRAXIS

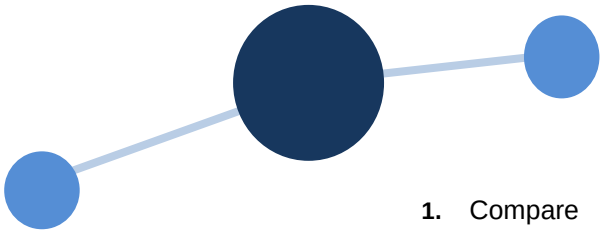
5.1.1 Explore funding opportunities to support such a position

1. Understand possible sources of funding of projects and their implementation.

This includes prioritization and pragmatic approaches.
PILLARS TO STAND ON:

1. Slow down degradation and catch up with restoration.
2. Change the image of farming, especially goat farming by looking at how domestic animals can be managed sustainably in the thicket context.
3. Acknowledge that we are working in social ecological systems.
4. Acknowledge the importance of monitoring. Consider the use of global products in monitoring through remote sensing.
5. Allow and enable adaptation of the ecosystem to climate change and enable the links with ecosystem services.
6. Address and acknowledge governance issues such as contradictory legislation.

5.2 CREATION OF A SMALL EFFECTIVE INSTITUTIONAL BODY TO DEVELOP THE STRATEGY FOR THICKET PROTECTION AND RESOURCE USE UNDER THE CHAMPION



24, 98, 106, 236, 243

5.2.1 Co-develop a strategy to identify challenges and maintain focus

1.4.9 2.2.1 6.1

1. Protected areas should be a priority.
2. Identify pristine areas.
3. Identify other important areas for protection.
4. Identify areas to be utilized for livestock farming.
5. Develop a landscape plan to identify areas acceptable for citrus farming.
6. Develop a strategy for compatible farming with spekboom.

5.2.2 Co-develop a strategic framework to guide current thicket management

1.1.1.8 1.5.5

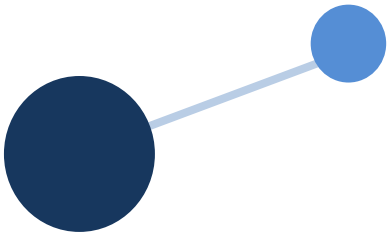
1.1.1.8 1.3.3.5 1.4.1.1 1.4.3 1.5.1.2 2.1.4.1

2.1.1.3

1. Compare economically productive veld to spekboom thicket.
2. Determine how land can be restored to be productive and support the people on the land.
3. Understand who buys the products produced in the thicket biome – can they play a role in protecting the thicket?
4. Investigate alternative economic approaches and outcomes.
5. Develop a sustainable grazing regime for thicket.
6. Determine how wild harvested plants can be supplemented satisfactorily with cultivation.
7. Understand how tourist's animal viewing needs can be balanced with sustainable management.
8. Determine how large wildlife areas in thicket should be managed to be sustainable.

5.3 CONSULT AND COOPERATE WITH KEY ROLE PLAYERS INCLUDING STOCK FARMERS

1.2.2
3.2

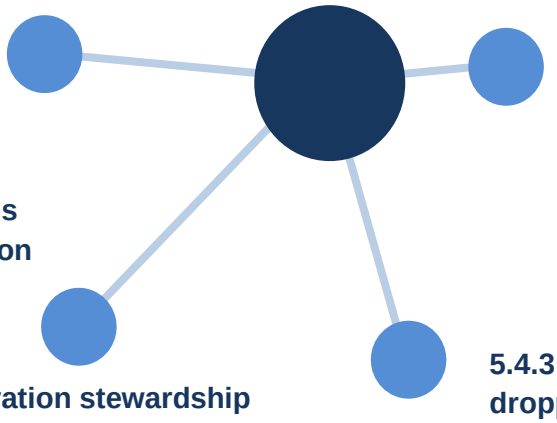


5.3.1 Develop a strategy for resource use

1. Determine how wild harvested plants can be supplemented satisfactorily with cultivation.
2. Understand how tourist's animal viewing needs can be balanced with sustainable management.
3. Determine how large wildlife areas should be managed to be sustainable.

5.4 WORK TOWARD DECLARING ALBANY THICKET AS A BIOSPHERE RESERVE

4.3



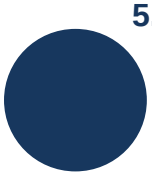
5.4.1 Use other biospheres as an example such as the Gouritz Biosphere Reserve. Work towards biodiversity certification and stewardship.

105

5.4.4 Determine how to bring restored areas into stewardship and examine the possibility of certification that would make intact land more valuable

5.4.2 Develop conservation stewardship initiatives as a conservation tool on private land within the thicket biome

5.4.3 Determine the possibility of dropping fences to create larger more open systems over properties of private land -owners with conservation tourism and other compatible objectives

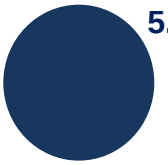


5.5 DEVELOP A COMMUNICATION SYSTEM TO MARKET THICKET (to be developed)

2.2.1.4
2.2.2

5.7 DEVELOP MONITORING PROTOCOL (to be developed)

5.6 COMPREHENSIVE LITERATURE REVIEW CONCERNING THE THICKET (to be developed)



5.8 DEVELOP EXTENSION SERVICES (to be developed)

6 APPLIED RESEARCH

Triage control (what can't be rehabilitated, what is worth rehabilitating, and what is so lightly infested or damaged that it can be a last priority). Consider topics such as alien vegetation, spekboom planting strategies, remote sensing and indigenous knowledge.

70

5.2.1

6.1 INVESTIGATE DIFFERENT APPROACHES TO REHABILITATION

1.4.7
1.5.2.4

6.1.1 Investigate different combinations of methods for rehabilitation

6.1.2 Determine how areas that are degraded due to previous land uses, e.g., chicory farming, can be rehabilitated to correct for the resultant acidification and nutrient depletion of soils

1.5.2.1

93, 259

1.1.2.3

6.2 DETERMINING EXTENT OF ALIEN INVASIONS AND APPROACHES

6.2.1 Understand the extent, impact and management of alien species like prickly pear and how well does biocontrol work in areas that are too thick to reach

6.2.4 Understand the links between restored areas and different management practices and subsequent invasion by alien plants

6.2.2 Understand the distribution of cacti species and their links to soil erosion

6.2.3 Investigate alternatives for controlling alien invasions effectively

Appendix 1: Agenda for the Albany Thicket Research Framework Workshop

ALBANY THICKET RESEARCH FRAMEWORK MEETING

PROGRAM

Gavin Relly Postgrad Village, Rhodes University, Grahamstown

23rd- 24th October 2018

Facilitator: Harry Biggs

Organisor: Rina Grant-Biggs

Minute taker: Kyra Lunderstedt

The meeting is funded by the Department of Environmental Affairs Chief Directorate: Natural Resource Management (DEA: NRM) and hosted by the Rhodes Restoration Research Group (RRRG).

DAY ONE: TUESDAY 23rd OCTOBER

08:30 Tea and registration

Session 1

Time	Topic	Speaker
09:00	Opening of meeting	Michael Braack
09:05	Welcome & introduction	Mike Powell
09:10	Setting of provisional elements for a vision for thicket research and praxis	Harry Biggs
10:00	Discussion: State of the thicket and its unique qualities	All
10;20	A systems perspective of the thicket	Bob Scholes
11:00	How climate change may play out in thicket & adjacent vegetation	William Bond

11:20 Tea break

Session 2

Time	Topic	Speaker
11:45	Resilience and importance of socio-ecological links in resilience.	Kirsty Maciejewski
12:05	Social and cultural importance of the thicket and its sense of place.	Michelle Cocks
12:25	Biodiversity associated with the thicket.	Phil Desmet
12:45	Resource economic processes in the thicket.	James Blignaut
13:05	Discussion: Herbivory, livestock and wildlife effects on the thicket.	All

13:25 Lunch break

14:30 Revisit and consolidate the aim of thicket research and praxis.

Facilitated by Harry Biggs

The objectives of this session are to:

- Integrate information sent beforehand with the notes taken on key drivers during talks, and emergent ideas from participants.
- Develop and agree on high level objectives.
- Continue until sufficient consensus is obtained amongst participants.

We expect the session to end between 4 and 5 pm. *Afternoon tea will be served.*

DAY TWO: WEDENSDAY 24th OCTOBER

08:00 Tea and registration

08:30 Session 1: Short (5 minute) talks to cover other important topics

1.	**Ayanda Sigwela**: Summary of research needed to support consultants in communal areas.
2.	**Bruce Taplin**: Summary of research needed to support alien control and restoration.
3.	**Chris Reynecke**: Summary of research needed to support managers of wildlife reserves.
4.	**Brian Reeves**: Summary of research needed to support East Cape Parks.
5.	**Japie Buckle**: Summary of research needed to support NRM projects in thicket.
6.	**Justin Gird**: Summary of research needed to support Living Lands restoration projects.
7.	**Tony Dold**: Summary of research needed to support knowledge of cultural uses of thicket vegetation.
8.	**Jan Vlok**: Research required on differences in the dynamics of thicket types, including Mosaic types.
9.	**Tony Palmer**: Summary of products available to support thicket monitoring.
10.	**Glenn Moncrieff**: Monitoring thicket transformation with daily, high resolution satellite imagery: tools and use-cases.

09:30 Touch up high level objectives and decide on working groups to unpack these further.

10:00 Tea Break

10:30 Break into working groups to develop the research/praxis questions as subobjectives to address the high level objectives.

13:00 Lunch Break

14:00 Discussion and report back of working groups.

15:00 Summary, closure and thanks by Mike Powell

*The outcome of the **discussions will be circulated to all participants** and any other interested parties for further comments and contributions.*

Unfortunately Prof Richard Cowling and Dr Marietjie Landman could not attend last minute and their intended talks were covered by others in the program.

Attendees of meeting

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Attendees of meeting cont.

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Appendix 2: Workshop attendees

Other contributors

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Alistair	MNU
Izak Smit	SANParks
Jan Venter	MNU
Christo Marais & Guy Preston Michael Braack Ahmed Khan, Sarah Polonsky	DEA

Appendix 3 Littterature list for reference

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