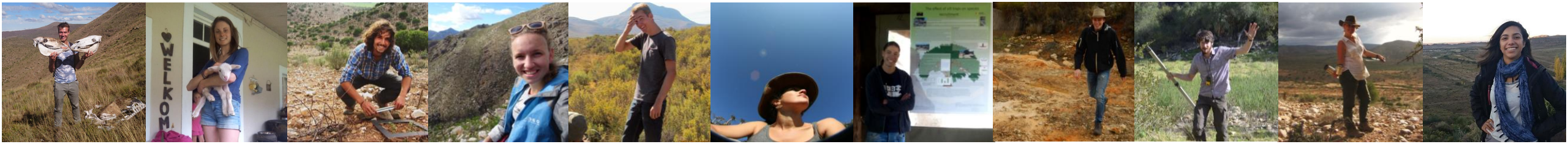
STUDENTS ON THE LANDSCAPE

livinglands
Collaborations working on living landscapes

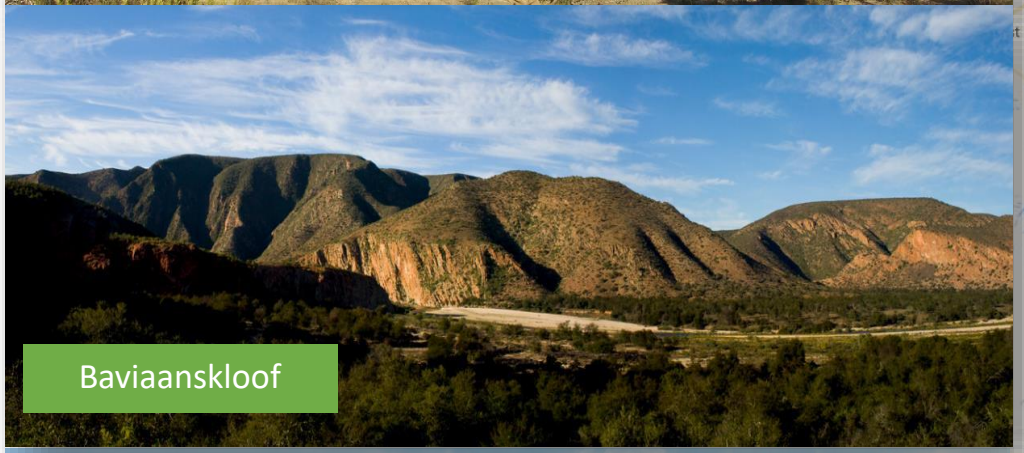
February – September 2017

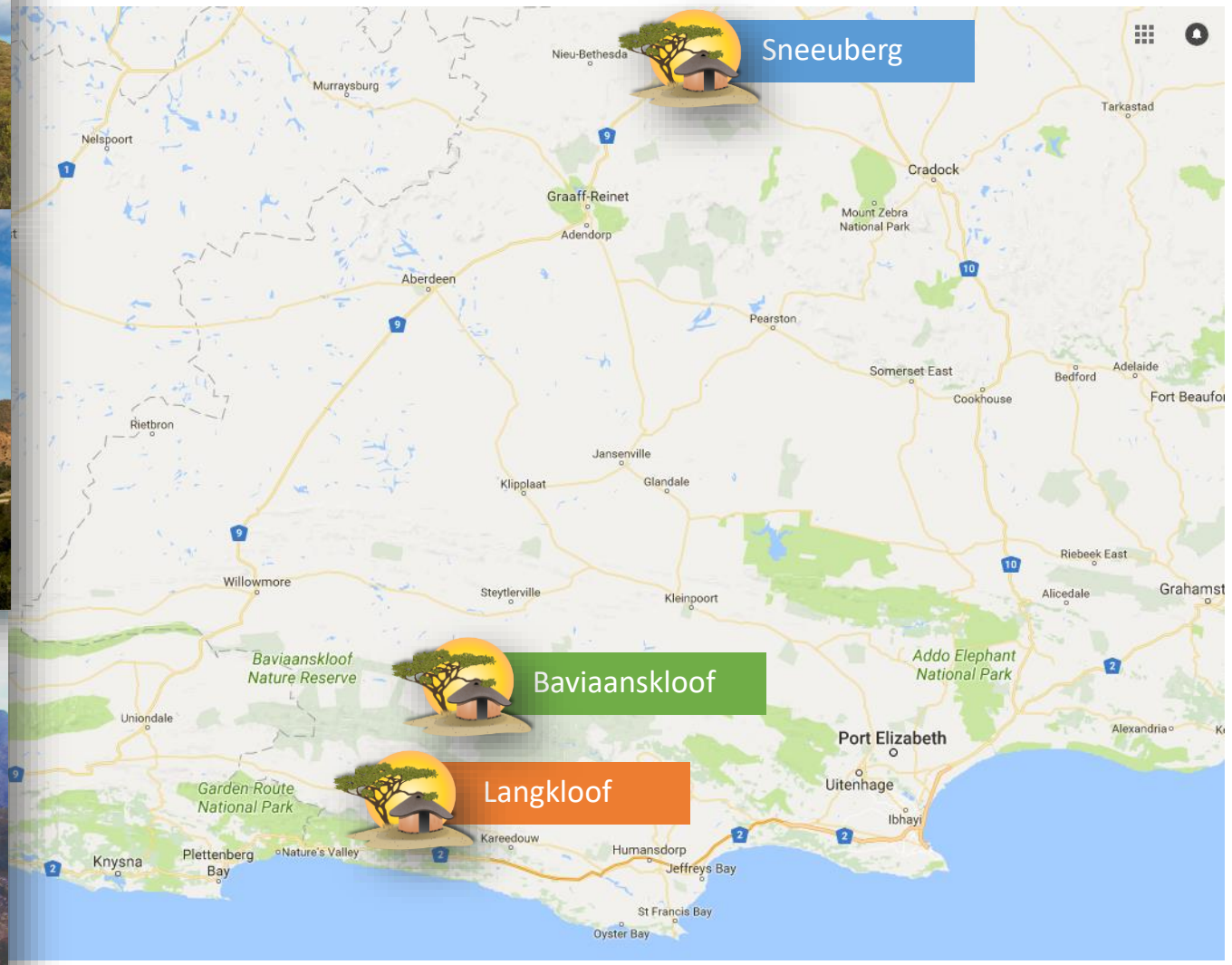


At PRESENCE Learning Network we host students and researchers in order to answer key questions in relation to creating, planning and implementing approaches that together build Living Landscapes.

Rigorous transdisciplinary research needs to be undertaken to address critical knowledge gaps in our understanding of optimal living landscapes over time and space.

PRESENCE LANDSCAPES





BAVIAANSKLOOF

Amanda Alfonso
Assessing the social implications of ecological restoration

Elise Delétré
Creating an index of soil health in the Baviaanskloof

Jurian Schepers
What is the effect of silt traps on plant recruitment?

Pablo Ríos
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LANGKLOOF

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SNEEUBERG

Olaf Amersfoort
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Joost Krooshof
Can dams be designed to reduce gully erosion for a catchment?”

Amanda Alfonso | Chili |MSc Environmental Sciences |Wageningen University | April 2017

“Assessing the social implications of ecological restoration”

I worked in the Baviaanskloof from April 2017 for three months while collecting data for my master thesis. I conducted a survey on households of the local community in the Hartland area, gathering information about people’s livelihoods. The main objective was to estimate the effects of restoration programs, which have been carried out extensively in the area, as a human development instrument. The results showed a significant impact on income level and household wealth among those households involved in restoration work. However, the programs did not have long term effects, as dwellers came back to the same poverty level once the restoration work finished.

In addition to my studies, I had the chance to learn from other students and practitioners in the area, such as techniques for recovering degraded soil, or how to characterize vegetation for validating satellite images. What I enjoyed the most while working with Living Lands was to experience everyday life in the Baviaanskloof: the braais, the potjies, the mountains, the gatherings around the fire, the spontaneous plans, and those well-planned that never were. In the future, I hope to continue to apply what I learnt in the Baviaanskloof, and investigate ways to make the investment in natural capital more beneficial for both, people and landscapes

Elise Delétré | France |BSc Biology |Université Bretagne Sud| April 2017

“Creating an index of soil health in the Baviaanskloof”

In the frame of my Bachelor’s I did a three month internship within the Baviaanskloof area. The subject of the study carried out during this period was to establish a soil health index which would be usable both in natural and farm lands. Numerous soil health indices exist, but need to be adapted to meet the specific needs of the area. The farmlands are being reconverted into lavandin and rosemary fields and the optimum values of the soil properties have to be known to allow a good plant growth. Using the soil health index, I investigated the current state of the soil and provide recommendations, where necessary, to improve the soil’s properties. This study provides a method for detailed analysis of soil properties to guide restoration and sustainable agriculture practices. The work done was mostly bibliographic research along with the writing of test procedure sheets. In parallel a study focused on water properties was carried out on the “Mission Impossible” land which is being restored with silt traps to prevent soil erosion and improve water retention. The objective was to evaluate the efficiency of silt traps on water retention by comparing soil moisture, infiltration rate and retention capacity. The main outcomes were that the soil was very dry but does have a quick infiltration rate. The report written explains all the information accumulated during these three months and provides recommendations for future students to work on.

My stay in Baviaanskloof was more than an internship because it was an incredible experience which allowed me to open my mind and meet people which made me discover other ways of thinking.

Jurian Schepers| Netherlands | Internship Forestry & Nature Management |VHL | Arrival: March 2017

“What is the effect of silt traps on plant recruitment?”

I spent five months conducting my internship with Living Lands in the Baviaanskloof. During these five months I worked with the restoration project in the Baviaanskloof and participated in different parts of the project. Due to the fact that I was conducting an internship rather than a thesis I was not working on a single project, but more working wherever I was needed. This means I did work such as field mapping, planting spekboom, building erosion control measures, and helping other students with their research. Of course I also had my own research project but that was not the main goal of my internship. The main goal was to gain field experience, and I have definitely achieved that. Due to the vast variety of jobs that I was given I learned a lot of new skills during these past five months. My own research project was located on the Damsedrif farm, on a slope known well amongst Living Lands staff as “Mission Impossible”, due to its level of degradation. The goal of my project was to test the effectiveness of the erosion control measures carried out on the site by measuring the increased plant growth. The results found no increase, but the reason for this is likely the small growth window (one month). It will be interesting if further measurements will show different results.

The thing I enjoyed most about working with Living Lands is the atmosphere at work. Working at Living Lands makes you feel more like part of a family, rather than just part of a business/organization. This makes it much more rewarding to work with them and made me feel really at home. I have to admit though; it also makes it much more difficult to leave at the end of the five months. I am very happy to have been a part of Living Lands and I am hoping to be back very soon.

Pablo Ríos| Spain | Internship Agricultural Science | University Santiago de Compostela| March 2017

“Testing the application of TerraCottem with Spekboom in degraded land under silt traps”

I conducted my project on the “Mission Impossible” site. With the help of my student colleagues and the rehabilitation team, we planted 200 Spekboom in a total of 5 treatments with different quantities of TerraCottem, a soil conditioner. The spekboom were planted in conjunction with a silt trap. At the same time we planted 80 Spekboom, in the nursery in a total of four treatments with different quantities of TerraCottem. We expected to find differences on the growth of the Spekboom between the different treatments. We also expected to find differences in the recruitment of other species in the holes where the Spekboom were planted. I did two measurements in the field with one month between them and one measurement in the nursery. One month is not enough time to measure significant plant growth between treatments. It is likely that more time between measurements will obtain significant results. I am hoping to have one more measurement before one year to present the results in an international conference in Santiago de Compostela in July 2018.

About my time with Living Lands, I have to say thank you for making me grow personally, academically and professionally. I enjoyed the people, the landscape and the work. Running in the Baviaans mountains with the wild animals is something that made me feel alive! It reminded me when I was a child and I dreamed of living my life wanting to be free, well, I am a lucky guy because I felt that sensation in the Baviaanskloof, and it is an experience that is priceless! I really enjoyed the time with the Otto’s restoration team, the amazing time spent with my friends at the student house, the farmers and the amazing people who live in the Baviaanskloof, especially Lois. I am very happy to have met you all and of course the wonderful people of Living Lands, I enjoyed each second of working with you!

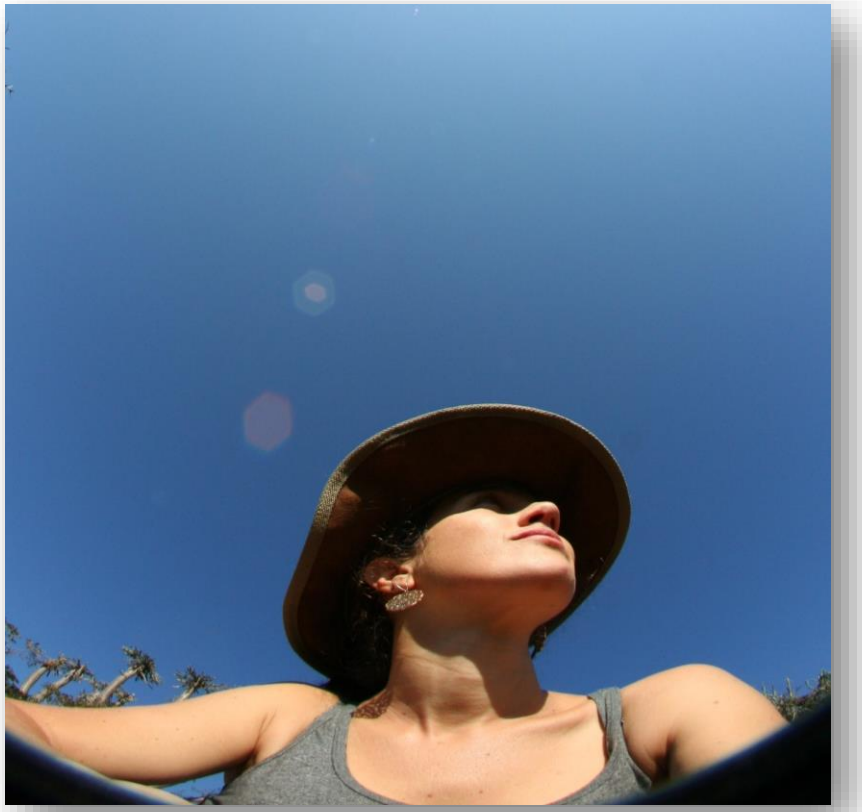
Sophie Kleiss| Netherlands | Internship Arts in Tourism | NHTV Breda | February 2017

“Is there a possibility to develop agritourism surrounding essential oils?”

My internship was conducted in the Baviaanskloof. The most beautiful landscape of all the landscapes that Living Lands works in, in my humble opinion. The project I was involved in had to do with the new DevCo company that produces essential oils and in which the farmers also hope to create a more diverse income via tourism. So, I investigated the possibility of developing agritourism in the Baviaanskloof Hartland area, to promote improved livelihoods out of essential oils and ensure a greater success of restoration efforts in the Baviaanskloof.An in-depth literature review revealed that agritourism should include at least one agricultural activity and a touristic one. Moreover, research into the expectations of agritourism included educational activities, participation activities, and commerce. Agritourism can be developed in the Baviaanskloof, although it will require joint efforts and communication within the farming community to be able to develop a sustainable agritourism destination built upon the newly established essential oils enterprise. The agritourist can become a part of the process of restoring the lands by indulging in the farms’ activities surrounding essential oils and the related thicket restoration efforts, therefore creating an additional income for the farmer. In addition tourists will be educated and will indirectly support thicket restoration in the Baviaanskloof.

This internship with Living Lands has been an amazing experience in which I, for a short period of my life, could experience a different kind of lifestyle and loved it.

Trinidad del Rio| Chili |PhD Geo-Information Science |University of Twente| May 2017



“Evaluating spatial-temporal dynamics of multiple ecosystem services affected by interventions in rural landscapes”

I conducted data collection in the Baviaanskloof as part of my PhD which will be completed in 2020. I aim to evaluate how interventions involving ecological restorations and sustainable agricultural management can affect the spatial and temporal dynamics of ecosystem services (ES) by using geospatial information tools. Since 2004, almost 1500 Ha had been planted with Spekboom. Currently, within and near these intervened sites, different levels of vegetation cover and plant survival rates can be observed. Organic rosemary and lavandin fields for essential oil production have also been recently planted pursuing a higher, resilient and more ecological source of income to farmers, as an alternative to the traditional livestock farming. Sample plots were used to estimate and compare the average vegetation cover, biomass and water infiltration capacity of the soil under intervened and non-intervened sites. These parameters will be used to estimate the provision of relevant ES such as erosion prevention, water regulation, carbon sequestration and potential forage provision. The delivery of these ES will be mapped together with vegetation indexes from GIS images. This evaluation will help to inform better land and how interventions can lead to improvements in agroecosystems that could effectively foster nature to provide sustained provision of goods and services.

Working with Living Lands was a very enriching experience. It allowed me to meet people from different backgrounds and to connect with the farmers and local communities. I am enormously grateful to my fellow students for their assistance. I really enjoyed my time in the Baviaans meeting amazing people and animals. We had tons of fun discovering such a beautiful landscape together! The Living Lands team provided great support and created a friendly work environment.

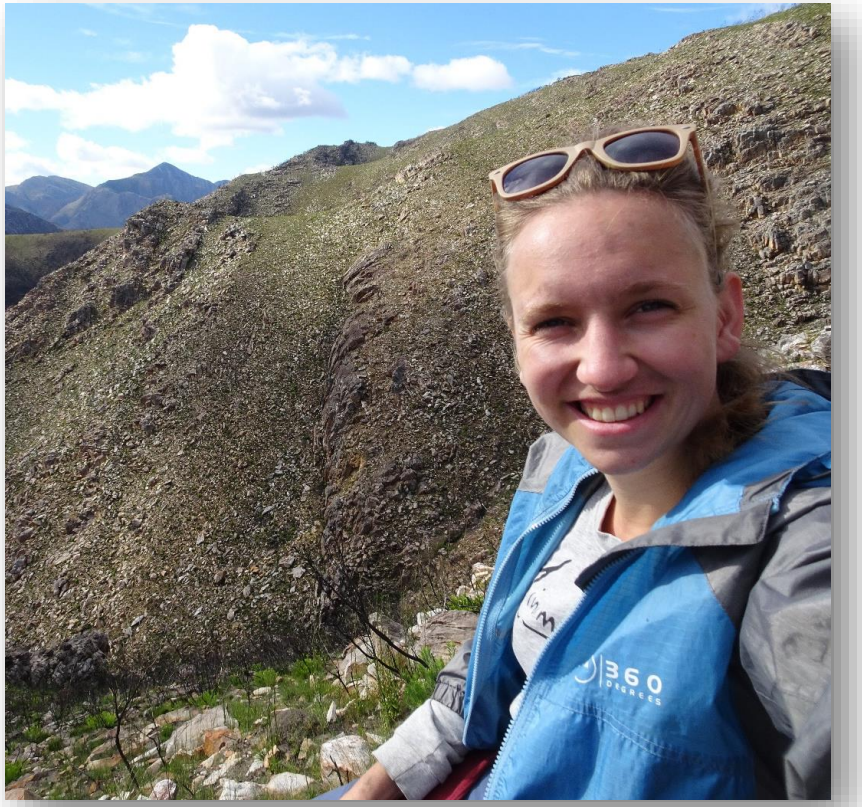
Job Kwakernaak| Netherlands |BSc Land & Water Management |Wageningen| February 2017

“Black Wattle and water availability in Haarlem South Africa”

I did a research internship with Living Lands in the Langkloof. My research took place in Haarlem and was about a project of Black Wattle removal to create more water availability. I mapped the areas effected by Black Wattle, measured the density and size of the Black Wattles and calculated water losses. This should give an overview of the effected area, which can be used if the people want to remove the Black Wattle. I joined a lot of fieldtrips in the Langkloof for my internship. I learned a lot about land restoration, invasive plant and honeybush on these fieldtrips. I tried to support the Langkloof team in their research, not only by helping in the field, but also small tasks such as taking notes or looking up literature. It was really great to work with such a nice and supportive team and to learn so much about a new landscape.

The Langkloof team had a lot of knowledge and they shared this with me and all the people they worked with. I saw that they really cared for the area and wanted to improve the livelihoods and the landscape of the Langkloof. I enjoyed my stay with Living Lands a lot. I made friends with students from PRESENCE, researchers from Living Lands and local people and I will cherish some of these friendships for the rest of my life. I learned so much about a completely new area and I was able take part in projects to help this area, which gave me a lot of satisfaction. This made the research and internship really interesting and fun and made me fall in love with the Langkloof.

Daniek Bosch| Netherlands |MSc |Radboud University| April 2017



“Monitoring and evaluating social learning using a participatory modelling approach”

I conducted my masters research project with Living Lands in the Langkloof. In my research I have been monitoring and evaluating social learning during a participatory modelling process. The WRC project aims to build a hydrological model for the water catchments of the Kouga, Kromme and Baviaans rivers. The model building is designed as a participation process whereby the stakeholders provide input data while thinking with the modellers about output scenarios. Moreover, this participatory modelling approach can be used as a tool to engage with stakeholders from all over the Langkloof. Bringing people together is in literature often described as the key to success, so in my research I wanted to find out if this approach is indeed the right thing to do in this landscape. During my four month internship, I have been involved with one learning journey and I interviewed 12 stakeholders that have been engaging with Living Lands. The preliminary results of this research are that in general people have trust in the mission of Living Lands and they are keen to see things happen. However, they do not just want to talk about it, so that is something to keep in mind. Also, the engagement is not yet at a stage in which social learning is visible in terms of broadened perspectives or increased collaborations.

During my time with Living Lands I have had some amazing experiences. I met a lot of people and was really a part of the landscape and the people in it. I especially enjoyed the company of my colleagues Thelani and Ancia, who have been taking me everywhere, even in their free weekends. It was also really nice to be part of a bigger student network and I was happy that Living Lands actively facilitated contact and exchange of experiences between the landscapes.

Noud van Dam | Netherlands | Internship Environmental Sciences | Wageningen | April 2017

“Riparian Restoration in the Braamrivier area of the Kouga Catchment”

From April to June I was based at the Living Lands branch in the Langkloof. During those three months I was engaged with my research, which was simultaneously a Living Lands project, on the potential riparian restoration of the Braamrivier. The Braamrivier has undergone, like other tributaries of the Kouga River, a process of river modifications that has adverse effects on the ecological integrity of these rivers. The objective of the research was to find out which river management measures can be undertaken to make the Braamrivier ecologically more resilient and better able to provide water for multiple beneficial uses. The preliminary conclusion of the research was that, in order to achieve the vision of a ‘restored’ riparian area, much work needs to be done. This would include physical interventions such as restructuring of river banks and the planting of riparian vegetation, as well as raising awareness amongst stakeholders on how the system functions and what the effect of certain modification to the river would have.

What I particularly enjoyed about my time at Living Lands was getting to know new people around the Langkloof house, talking to them and hearing their life stories and perceptions of societal issues in South Africa. Particularly the engagement of Living Lands and Grounded staff was heart-warming. The experiences in nature, the several hikes, restorations projects, and visits to different landscapes were very enjoyable.

Olaf Amersfoort| Netherlands |Internship Soil & Land Management |Wageningen| February 2017

“Erosion mapping in the Sneeuberg”

Land degradation in the Sneeuberg has been of concern for over a hundred years. In the past, these lands have been overgrazed, mainly by sheep, causing an incomplete vegetation cover and replacement of grassland by shrub vegetation. This has led to land degradation in the form of both rill and gully erosion. In order to find out if current Soil and Water Conservation measures are sufficient in the counteraction of erosion, the state of soil loss was investigated. I did this by analyzing vegetation, interviewing the landowner and making use of the Revised Universal Soil Loss Equation. Results show that erosion (gullies and loss of topsoil) exists in many places. Additionally, indicators of overgrazing on the more flat areas and around rivers was observed. The landowner acknowledges the erosion, but wants to minimize intervention to prevent further disturbance. More restoration is necessary to reduce erosion and overgrazing. Several options for the application of restoration measures are proposed to help resolve this matter.

During my internship with Living Lands I really enjoyed the open attitude towards students of the people around me. I learnt a lot about the projects Living Lands is involved in and I had some parties and braais I will never forget. I loved it that these parties were in different landscapes, which allowed me to see more than just one area of this beautiful country. What I liked the most was the relationship with my host supervisor, whom I befriended for the rest of my life. I received a lot of help with the conduction of my research but he also made me feel welcome from day one in South Africa. Additionally, I liked the diversity of things happening on this farm. From catching wildebeest to checking fences. I loved every day of my stay in this stunning landscape.

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Joost Krooshof| Netherlands |Internship Soil & Land Management |Wageningen| February 2017

“Can dams be designed to reduce gully erosion for a catchment?”

The Sneeuberg uplands have experienced land degradation in the form of gully erosion due to overgrazing since the 1850’s. Aerial photographs suggest that this erosion has been stabilised since 1945, however, gully erosion signs, such as exposed roots and rocks, indicate that erosion is still active in the catchment. Estimations suggest that climate change may increase rainfall by 5–10% for the Sneeuberg uplands, which will also increase runoff. I investigated how check dams can be designed to reduce gully erosion. Observations and measurements during transect walks and daily rainfall records provided data to answer this question. The catchment was divided into four sub-catchments for which the peak runoff was calculated using the rational method. Together with gully measurements, the dimensions for the check dams were determined. These dimensions were adjusted to meet several requirements for the stability of the dams. Constructing these dams should reduce gully erosion by 1.85–4.3% per check dam, depending on the sub-catchment.

My time in South Africa and Living Lands was amazing due to the open and kind personalities of the students and employees of Living Lands. The joint “work parties” allowed me to meet the entire organisation and taught me a lot about the amount of work that is required in restoration. The time in South Africa would not have been the same if I did not have Francois Retief as my supervisor. At the end he was not just my supervisor, but we had become good friends. This has been an experience that I will not forget.