



SEOSAW Newsletter August 2026

Hello SEOSAW family!

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1. We are looking for new members to join our Scientific Steering Committee

We'd like to thank Francisco Maiato Pedro Gonçalves, Clemence Zimudzi, Muri Gonçalves Soares, Stephen Syampungani and Phesheya Dlamini for all of their contributions to the Scientific Steering Committee as they step down.

We are now looking for applications from enthusiastic SEOSAW members to join our Scientific Steering Committee (SSC).

Purpose and objectives of the Scientific Steering Committee

SEOSAW's main purpose is to facilitate collaborative research on African woodlands by building a network of people, plots and ideas. SEOSAW is guided by its scientific steering committee (SSC), which oversees the scope of SEOSAW's activities. It is expected that SSC members are active in many of the following areas:

1. Setting collective goals for SEOSAW in terms of the research agenda, outreach, and training by contributing to discussions in roughly quarterly online meetings and by email.
2. Growing and maintaining the network by fostering connections with new researchers
3. Encouraging the set-up of permanent plots and supporting long-term plans for remeasurement
4. Developing standardised methods for plot design and measurement, tailored to the socio-ecology of African woodlands, and promoting these methods in the wider community
5. Facilitating the use of SEOSAW data in analyses
6. Planning and organising networking events and training workshops to connect African researchers and build capacity

The SSC mostly comprises SEOSAW data owners (i.e. the leaders of active long-term sites), to ensure that decisions about the use of the data are closely informed by the data owners. However, it is important to have non-data owners on the SSC to provide leadership in other aspects of SEOSAW's work. Roles for such members include:

1. Contributing time to the leadership of SEOSAW network-wide activities (leading workshops, training, data management, outreach, policy engagement, network development etc)
2. Obtaining and managing funds to support SEOSAW fieldwork, events, management or network development
3. Developing new SEOSAW activities and building networks in countries where they conduct research
4. Leading the scientific outputs of SEOSAW

Currently we are looking to add new members to fill some of the latter roles, including **but not limited to:**

- Improving our representation in specific countries where currently there is no SSC member (e.g. Zambia, Angola, Botswana)
- Improving our representation where the network would benefit from further development (e.g. wet miombo, forest-savanna transitions, dry and semi-evergreen forests)
- Help SEOSAW develop activities and networks in West and Northeast Africa
- Develop the SEOSAW work related to soil science
- Develop the social science dimension of the network

If you have other suggestions of ways that SEOSAW could grow or have impact then we also welcome your application.

Submit your application through [this form](#), including a CV and a motivation letter by Friday 25th September.

Please keep the motivation letter brief (1 page) and include why you are interested in being part of the SSC and ideas on the potential contributions and expertise you could bring to SEOSAW as a SSC member.

2. Welcome to new SSC members

New co-chair!

Justice Muvengwi has agreed to become a new SEOSAW co-chair! He will shadow Sally Archibald for roughly the next year and then take over when Sally steps down. We are super excited to have Justice step up to this role. Congratulations and thank you to Justice for taking this on.

New SSC member!

Anderson Muchawona of the Zimbabwe Forestry Commission has joined the SSC to provide representation for all the plots his team have been setting up and re-censusing in Zimbabwe. Welcome Anderson!

3. Science Seminar invitation – 20 August 2026



Please join us at our next science meeting:

SEOSAW Research Showcase - the latest updates from SEOSAW-associated researchers

Date: Thursday, 20 August 2026

Time: 10:00 - 12:15 BST

Please register here: [SEOSAW Science Meeting - Research Showcase](#)

[Agenda](#)

Feel free to share this meeting with your colleagues and students— these meetings are open to anyone!

If you have any questions or require further information, please do not hesitate to contact seosaw.office.edi@ed.ac.uk . We look forward to seeing you there.

4. Field Update - Building South African networks: joint Field Training and Resampling Campaign in Kruger National Park



In May, researchers from EFTEON (Expanded Freshwater and Terrestrial Environmental Observation Network), the CSIR (Centre for Scientific and Industrial Research) , SANPARKS (South African National Parks), Wits University, and the SEOSAW and GGG (Global Grassy Group) plot networks came together to exchange methods and jointly manage one of the longest permanent sample plots in the southern African region: the Skukuza Flux tower in the Kruger National Park.

This has been an environmental monitoring site since 2000 when the flux tower was installed, and researchers from many institutions have worked there over the years. In 2019 it became an official SEOSAW PSP and has been key to providing information on vegetation dynamics in arid

savannas exposed to elephants, fire and wildlife. Two additional SEOSAW plots on the basalt soils have also been set up in the KNP.

As the Skukuza flux tower is now being integrated into the EFTEON research infrastructure it was essential to have effective handover of the data and sampling methods. Thus 12 researchers spent a week in the field, alternating between four different sampling protocols to ensure that we build capacity across the institutions. The training and planning activities strengthened technical capacity in vegetation monitoring, ecological data collection, field logistics coordination, and long-term savanna ecosystem monitoring.







5. Field Update - From Southern to Northern Zambia: Exploring the Miombo Woodlands



On 14 April 2026, researchers Tsitsi Theo Maponga and Sandile Mazibuko, under the supervision of Prof Justice Muvengwi, Prof Sally Archibald, and Prof Kyle Dexter, embarked on a field expedition to Zambia as part of the SEOSAW project. Their journey began in Lusaka before continuing south to Kalomo, one of the study's drier miombo woodland regions. There, they were joined by Zambian botanist Mokwani Kaluwe and warmly welcomed by Gary Kandela from the Forestry Department.

The team surveyed four communal woodland sites around Kalomo that had previously been established by CIFOR partners. Each day began with an approximately two-hour drive along dusty roads winding through vast miombo woodlands to reach the sampling locations. Field activities included implementing the SEOSAW large and small stem protocols, the Global Grassy Group (GGG) vegetation protocol, and collecting soil samples. On average, ~600 trees were recorded in each plot, reflecting the remarkable diversity and structural complexity of these woodlands.

The expedition then continued north to Mutinondo, where the team revisited the area that previously sampled for GGG and humidity in September 2025. Two plots were successfully sampled, each with an average tree density of $\sim 1,100$ trees. The striking contrast in tree density between the southern and northern sites provided valuable insights into the ecological variation across Zambia's miombo woodlands.

This successful field campaign was made possible through the support and collaboration of numerous partners. The team gratefully acknowledges Belinda Mtetwa, Kaala Mombe, Sibusiso Dlamini, Mildred Sefuke, Thompson Sinadabwe, Victoria Njovu, the Forestry Department, the National Herbarium and Botanic Gardens of Zambia, and the village headmen and local communities whose generosity, expertise, and hospitality were instrumental to the success of the expedition.











6. Field Update - four new 1ha plots at the Mpala Research Center in Laikipia county, Kenya

Between mid to late June, the SEOSAW avengers led by **Carla Staver** established four new 1ha plots at the Mpala Research Center in Laikipia county, Kenya. The team was made up of PhD/master's students: **Emmanuel Oduro Takyi** (Yale University) supervised by Carla Staver, **Matúš Seči** (The University of Edinburgh) supervised by Casey Ryan (co-advised by Carla Staver), **Nothando Ngobeni** (University of Mpumalanga) co-advised by Carla Staver, and SEOSAW data officer **Jone Fernando Jr.** (WITS).

The site is characterized by an arid to semi-arid climate with two main soil types: black cotton and red soil types. Two plots were established on each soil type, with the black cotton soil plots dominated by the Whistling Thorn Acacia, *Acacia drepanolobium*, a species which was in constant tug of war with the “avengers” during measurements. The red soil plots were relatively woodier dominated by *Acacia etbaica*, *Balanites rotundifolia*, and *Croton dichogamus*. Other

tree species include *Boscia angustifolia* and *Acacia mellifera*. About 1980+ large stems were successfully measured and tagged across the four PSPs.

It appears that fires are less frequent here, but herbivore presence is enormous including megaherbivores such as elephants and giraffes.



1 - Group photo during plot establishment on the black cotton soil: (from left-right) Mandago, Jone Fernando Jr., Matúš Seči, Nothando Ngobeni, Emmanuel Oduro Takyi and Muka (game guard). Photo credit: Carla Staver.



2 - Group photo at the red soil site: (from left-right) Carla Staver, Jone Fernando Jr., Tony, Muka, Nothando Ngobeni, Matúš Seči, Emmanuel Oduro Takyi and Mandago. Photo credit: a generous *Acacia etbaica*.



3 - Emmanuel Oduro Takyi following along to tag measured trees.



4 - Jone Fernando Jr. marking plot corners.



5 - Matúš Seči with the differential GPS.



6 - “All work and no play...”! Carla Staver and Nothando Ngobeni testing some baseball skills using giraffe bone (bat) and elephant dung (pitched ball) after a long field day.

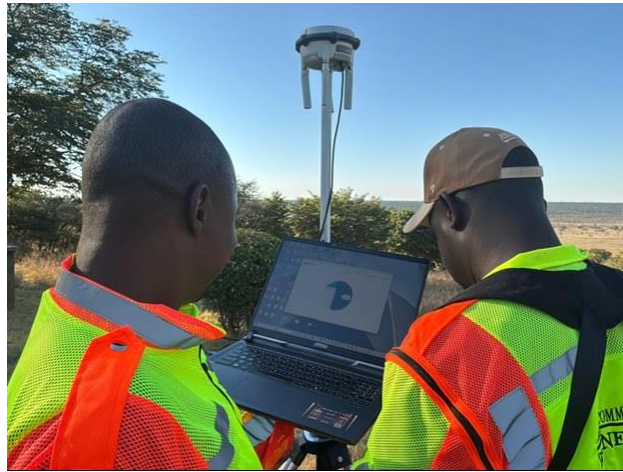
7. Field Update - UAV LiDAR and Multispectral Surveys in Zimbabwe's Gwaai Forest: A Step Forward for Woodland Carbon Monitoring

Zimbabwe | July 2026 | FAO Project TCP/SFS/4004/C3

A joint field mission to the Gwaai Forest in Lupane District, Zimbabwe, completed the country's first integrated UAV LiDAR and multispectral drone survey of permanent teak (*Baikiaea plurijuga*) woodland monitoring plots, a development with direct relevance for forest carbon accounting across southern African woodlands.

The mission, conducted 19–25 July 2026, was a collaboration between Zimbabwe's Forestry Commission, the Food and Agriculture Organization of the United Nations (FAO), and Afrostain, under the FAO project strengthening national forest monitoring capacities in Botswana, Malawi, and Zimbabwe. This work feeds into Zimbabwe's obligations under the UNFCCC and Forest

Resources Assessment and supports the country's forthcoming REDD+ results-based payment submissions.



7 - Setting up the RTK and calibration

What the team did

During a seven-day field study, the research team utilised a LiDAR-equipped UAV and DJI Mavic 3 multispectral drone to survey 16 forest blocks, covering approximately 100 hectares. The LiDAR sensor acquired three-dimensional point cloud data, which facilitated the derivation of the canopy height, crown area, stand density, and digital terrain models. Multispectral imagery is used for mapping species distribution and assessing canopy health using indices such as the NDVI and red-edge chlorophyll index. To validate the estimates derived from the drones, five circular ground-truth plots were established, where measurements of diameter at breast height (DBH) and tree height were collected at the individual-tree level. Additionally, a forest scanning application was employed to measure tree diameters, enabling the mapping of tree coordinates, which were used to calibrate the metrics obtained from the drones.

Permanent plots in Gwaai have been monitored since the 1990s, making this a rare opportunity to integrate modern remote sensing with a long-term teak woodland dataset directly relevant to SEOSAW members working on miombo, mopane, and Kalahari woodland dynamics.



8 - Calibration of RTK device to improve coordinates accuracy

What comes next

The team noted that five ground-truth plots fell short of the minimum 45 plots required for a statistically robust biomass model calibration and recommended 90 plots for high-confidence estimates. A follow-up two-week field campaign is planned, along with wood density sampling, to refine the aboveground biomass and carbon stock calculations. The post-processing of point cloud data, individual tree segmentation, and allometric model calibration are already underway.

This mission marks a meaningful advance in Zimbabwe's transition from satellite- and field-only assessments to integrated UAV-based forest monitoring and offers a replicable model for SEOSAW network sites across the region. The exercise will result in the development of a user guide and manual for use in upscaling the work. Zimbabwe has yet to conduct a national forest inventory; hence, the pilot exercise shall provide practical lessons as the country plans a national forest inventory exercise that integrates drone and ground-based survey methods.



9 - Team Members : Banarbas Mawire, Edwin Nyamugadza, Aaron T Chinofunga, Ruramai Murepa, John Nyamayedenga, Alphonse Mushipe, Mthelisi Mahamba Sebele

8. SEOSAW research from 2026

2026 is already off to a great start for SEOSAW papers! Well done to all the researchers who have contributed to these efforts.

- Gotore, T., Muchawona, A., Benitez, L., Gumbo, S. C., Godlee, J. L., Mograbi, P. J., Murepa, R., Mutete, P., Nyamugadza, E., Tembani, M. C., Ryan, C. M., & Archibald, S. (2026). Tree growth rates and their determinants inform sustainable harvesting of indigenous woodlands in Zimbabwe. *Biotropica*. <https://doi.org/10.1111/btp.70205>
- Carreiras, J. M. B., Higginbottom, T., Godlee, J. L., Harrison, S., Benitez, L., Mograbi, P. J., Levesley, A., Melgaco, K., Milodowski, D., Pickavance, G., Wells, G., de Oliveira, E. A., Arroyo, L., Bowers, S., Brien, R. J. W., Cardoso, D., Castro, A. A. J. F., Chavez, E., Coutinho, I. A. C., ... Ryan, C. M. (2026). Determinants of L-band backscatter in dry tropical ecosystems: implications for biomass mapping. *Remote Sensing of Environment*. <https://doi.org/10.1016/j.rse.2025.115213>

(Let us know if any SEOSAW papers are missing from this list)

9. What is SEOSAW?



SEOSAW comprises a network of scientists and also a network of vegetation survey plots across southern and eastern Africa. Members of SEOSAW conduct diverse research and come from a variety of institutions (academic, government, private, etc.), but are unified by a shared interest in the changing socio-ecology of woodlands and savannas.

The long-term goal of SEOSAW is to understand the response of African woodlands to global change.

SEOSAW is managed communally, and the scope of SEOSAW's activities is open to change as the network and its members' research interests develop. SEOSAW's main purpose is to connect researchers and their data, and to facilitate collaborative research via standardised methods and a curated, accessible database. Anybody is welcome to become part of SEOSAW, by contributing data or expertise, or by using the SEOSAW dataset for their research.

10. Who owns the data?



SEOSAW data belong to the people who collected it. SEOSAW oils the wheels by standardising the data and storing it in a common database, but the intellectual property belongs to whoever puts the data in, and the data can only be used by others with the owner's permission, and for specific purposes.

Anyone can request to use some or all of the SEOSAW data (see [here](#)). However, we put most of our energy into supporting SEOSAW network members and researchers in the region to make full use of the opportunities the SEOSAW offers. Typically this allows us to scale up our research from site-specific analyses to regional analyses that use data from across all of the woodlands. Or it allows us to use multiple data sets that are hard for one person or group to be expert in (e.g. soils, grass and tree data).

11. Request the SEOSAW data



We want the SEOSAW database to be as open and used as possible! If you have science questions, we have data and people willing to help you draft a data request!

To access the SEOSAW data, we require you to draft a data request which is reviewed by the SEOSAW steering committee first and then the data owners. This process takes about a month. The SEOSAW office is here to make this process as easy as possible for you, and will assist you in formulating your data request.

If you are interested, please answer the questions in this [document](#) and get in touch via the [contact form](#) if you would like to use the SEOSAW dataset. A sample of the dataset is freely available [here](#) to help you formulate your data request.