MEETING REPORT

Navigating Trade-offs in Landscape Scale Planning: Biodiversity, Oil, Timber, Carbon and Agriculture

A case study of the Murchison-Semliki Landscape

July 2nd 2013 Metropole Hotel, Kampala

Background

Woodlands are important ecosystems in Africa that contain significant biodiversity. Currently, many woodland ecosystems are being cleared or degraded at an unprecedented rate across Africa and this loss will have a serious impact on biodiversity and greatly contribute to ongoing carbon emissions. In 2011 ABCG partners recognized the importance of having a work plan that developed methodologies to help identify and prioritize those woodland areas that will achieve large conservation and mitigation gains, so as to achieve the greatest return on limited conservation and REDD+ resources. Such interventions should also attempt to minimize social cost, and increase woodland connectivity to enhance resilience to climate change and human pressures.

In 2011, three ABCG partners, the Wildlife Conservation Society (WCS), Jane Goodall Institute(JGI),and African Wildlife Foundation (AWF) developed a concept "Carbon Flux under Conditions of Climate Change: Woodlands, trade-offs and Climate change" with an overall aim to provide methods and case studies of the best ways to integrate the objectives of climate change mitigation, climate change adaptation, and biodiversity. Three case study areas were chosen: Murchison Falls-Semliki landscape in Uganda (WCS), Imbirikani Group Ranch in Kenya (AWF), and Masito-Ugalla Ecosystem (JGI). In each landscape, the case studies would be generated by different stakeholder groups including REDD+ project developers, government stakeholders and planners in African countries with substantial woodlands as well as the funders of Climate change (adaptation and mitigation) in Africa (such as USAID). This concept was successfully funded in the 2012-2014 Biodiversity Analysis and Technical Support (BATS) for USAID/Africa process.

As part of the 2012 workplan, WCS conducted an initial meeting to explore targets for the social, biodiversity and carbon data that had been assimilated to date and to discuss the process of assessing trade-offs in planning. WCS held a two day workshop at the Metropole Hotel in Kampala (Acacia

Avenue) on 27-28th August 2012 for conservation managers, planners, members of the development community and government. The area of focus for the workshop was the Murchison -Semliki Landscape in Uganda, one of six key landscapes identified in the Albertine Rift. The Landscape is increasingly under pressure from mining, timber extraction and agriculture conversation, and is also a site where WCS has a REDD+ project in development.

Based on feedback of attendees at the first workshop, WCS updated the data used in the analysis over the course of the next year and refined the scenarios and included in the analysis. The results of the more refined analysis were presented at workshop on July 3rd at the Metropole Hotel in Kampala. The aim of this report is to provide a summary of the meeting. The agenda for this workshop can be found in Appendix 1. The meeting was well attended with members of ministries of the government of Uganda, international and national NGOs, Makere University, industry (Total Oil), and members of the strategic environmental assessment team for oil in Uganda. A full list of attendees can be found in Appendix 2.

Meeting Aims

There were three aims of the workshop. The first aim was to review the biodiversity values and multiple pressures on the Murchison Semliki landscape and introduce how systematic conservation planning and spatial optimization tools could be used to explore trade-offs in landscape conservation. The second aim was to present the findings of the case study to stakeholders, incorporating stakeholder feedback from the previous workshop and highlighted where difficult trade-offs are likely to be necessary . The third aim was to solicit feedback and recommendations for next steps in the analysis and communication of results. Photos of some of the activities can be found in the appendix.

Providing context

The first sessions of the meeting were devoted to talks given by WCS staff that reviewed the work done to date and framed the analysis within the larger set activities within the landscape. Andy Plumptre welcomed attendees, and provided context for how the analysis presented in this workshop builds upon the prior Africa Biodiversity Collaborative group (ABCG) supported workshop and the . Dan Segan then gave an overview of ABCG and USAID/Africa Program's Biodiversity Analysis and Technical Support (BATS) through which the work is funded. The talk highlighted how the analysis was crafted with the

input of other ABCG partners and is currently being replicated in two other landscapes. The talk also explained the supporting agency's wider interests and objectives for funding the work.

Review of the conservation importance and multiple pressures on the landscape.

Andy Plumptre then set the stage for the workshop by reviewing the conservation importance of the landscape and then discussing the variety of challenges to the conservation future of the landscape. He reviewed much of the work done to date to collate and refine our knowledge of the location of species and ecosystems within the landscape. He highlighted the work Sam Ayebare has done to collate species records and model the distribution of threatened and endemic birds, mammals and plants within the landscape. Between the first and second workshop an additional 24 species distribution models have been developed that capture both the current distribution of each, and the forecasted distribution based on three climate forecasts. He then reviewed many of the potential challenges to the conservation future of the landscape, including oil and gas exploration and development, forestry and demographic shifts. The presentations highlighted some of the key data (biodiversity, carbon, deforestation rates) and highlighted outstanding questions that were discussed later in the workshop.

Dan Segan then provided an overview of the principles of systematic conservation planning and the evolution of the discipline. The talk highlighted the importance of setting clearing objectives to guide decision making, and the importance of considering socio-economic interests within conservation prioritization. The talk also introduced the Marxan decision support tool, and provided examples of how it has been used to examine trade-offs in conservation land use planning.

The talk generated two interesting discussions and lively debate among workshop participants. The first discussion centered on the importance of wisely allocating scare conservation resources, and conservation organizations thinking like investors. The group was very interested in the implications of considering the return on investment from conservation activities and questioned if exploring trade-offs within landscape scale planning would lead to conservation triage. The second discussion explored the challenge of target setting in the Murchison Semliki landscape and in conservation more broadly.

Trade-off analysis

The fourth presentation of the day was given by Dan Segan and began by providing an overview of how the data collected was incorporated into the Marxan decision support tool, and then how the tool and

scenario planning were used to explore trade-offs between the interests of different stakeholders in the landscape. The talk was organized into three sections, the first explored spatial conservation priorities if only a single stakeholder was considered (Fig 1), the second explored methods to balance the interests of different stakeholders (Fig 2), and the third explored trade-offs between biodiversity and carbon conservation (Fig 3).

Conservation objectives for all analysis were based on expert opinion for minimum viable population for threatened and endangered species and feedback of participants in the first workshop. The use of minimum viable conservation targets for all analysis means that results should be interpreted as the bare minimum in terms of areal extent required to support biodiversity in the landscape. Because the analysis was designed in part to explore the impact of extractive activities inside existing protected areas we did not require the inclusion of existing in the areas identified as conservation priorities. Full results that include conservation priorities that build off the existing protected area base were not included in the workshop presentation because of time constraints, but will we included in the final report.

Figure 1. Location of priority conservation areas in two scenarios, the first tried to minimize the total area required to achieve the conservation objectives (left) and the second attempted to minimize inclusion of areas with active oil exploration (right). Oil exploration areas are indicated by the blue outline. Selection frequency is a measure of conservation importance in Marxan, and colors on the map indicate relative importance when trying to achieve the specified objective. Areas that are required to achieve landscape scale conservation objectives are highlighted in red, orange are the second most important, yellow the third, and green the fourth. Areas displayed in white were never selected.

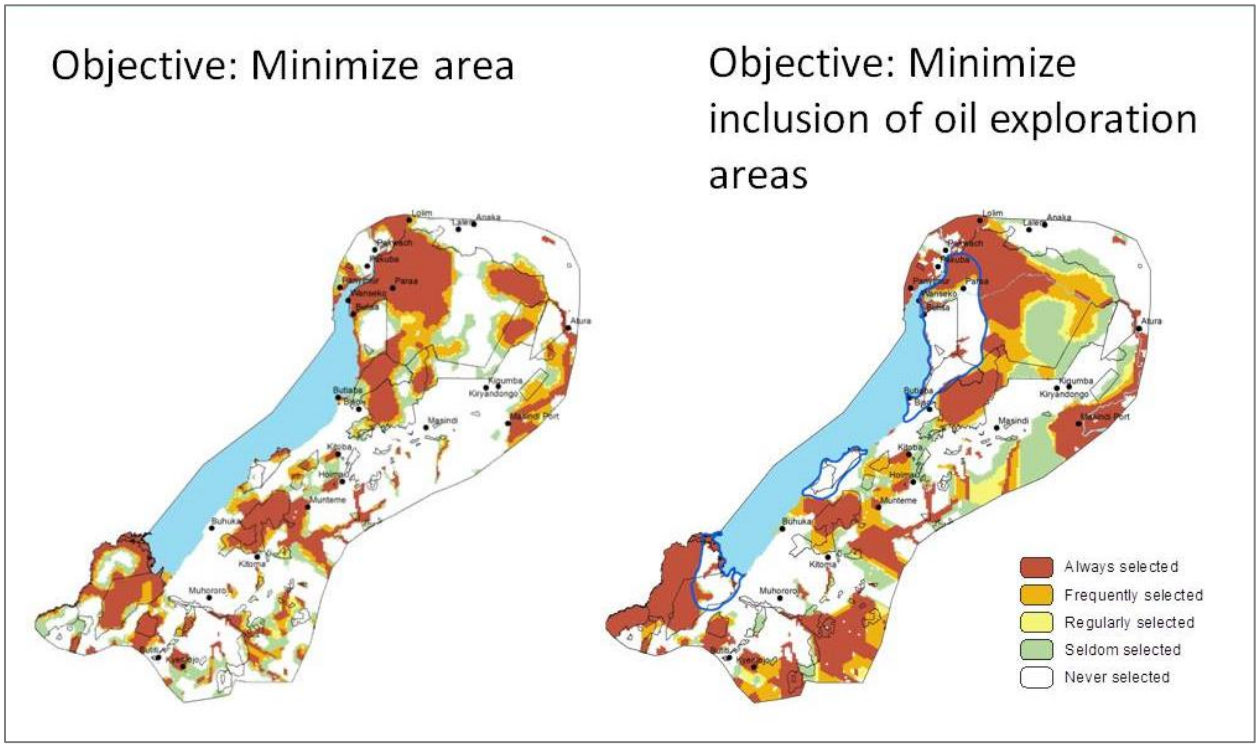


Figure 2. Priority conservation areas identified when trying to balance the interests of four stakeholders in the landscape. The interests of petroleum, human expansion, timber and biodiversity were weighted based on the perceived importance to attendees at the first workshop. Selection frequency is a measure of conservation importance in Marxan, and colors on the map indicate relative importance when trying to achieve the specified objective. Areas that are required to achieve landscape scale conservation objectives are highlighted in red, orange are the second most important, yellow the third, and green the fourth. Areas displayed in white were never selected.

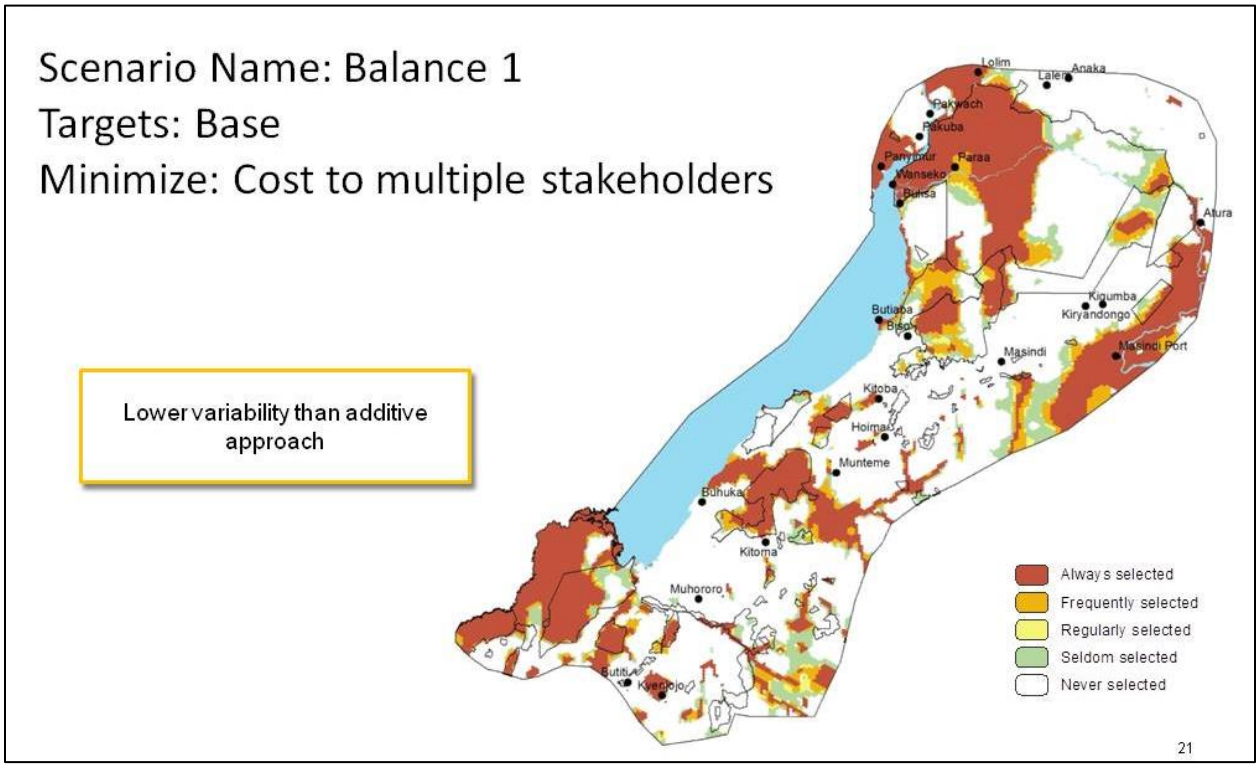
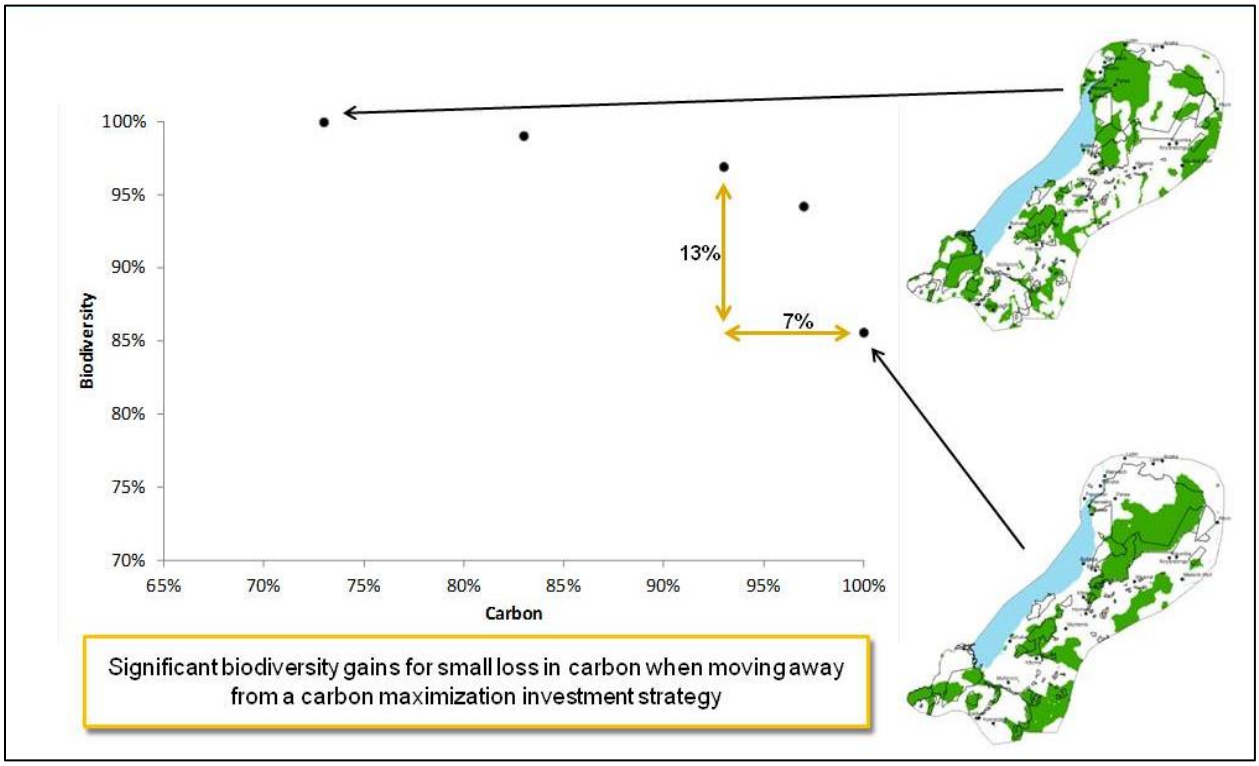


Figure 3.Trade-off curve between a biodiversity and carbon centric resource allocation strategies in the Murchison Semiliki Landscape. The point (and map) on the far left was established by considering only biodiversity targets and minimizing the cost of achieving those targets. The point (and map) on the far left maximized total carbon that could be protected for the same cost of achieving the biodiversity target. All points have the same overall cost but vary with respect to the extent biodiversity targets are met and carbon is captured within the areas identified. Green areas indicate areas identified as priorities through each resource allocation strategy.



Pipeline analysis

A pipeline is currently being planned to transport oil from wells inside Murchison Falls national park south to the Hoima region. Geoffrey Mwedde gave an overview of the analytic process that WCS and partners are proposing to use to identify options for pipeline routing in the region that would minimize the conservation impact of the development the pipeline. The proposed methodology leverages the principles of systematic conservation planning and integrates them within traditional least cost path analysis that is often used in identifying routes for infrastructure. The objective of the analysis is to identify areas where biodiversity would be most sensitive to disturbance. Participants also suggested that the impact of the pipeline might not be entirely negative and opportunities exist for potential conservation benefits from the pipeline. Specifically participants noted that if the pipeline were fenced

and ran along the western border of Bugungu wildlife reserve that it may help prevent poaching within the reserve and reduce cases of crop-raiding by wildlife outside the reserve.

Working group discussions

Workshop participants were broken into three groups, based on participant interest, to facilitate smaller group discussions. Discussion topics for the three groups were 1) Pipeline planning, 2) Reviewing species distribution maps, conservation targets and analysis outcomes, and 3) Recommendations for facilitating the methods and results of the analysis to inform decision making in Uganda.

After an hour of internal discussions each working group presented a summary of their discussions for the group. Two key points from each discussion are highlighted below.

1) Pipeline planning

- The proposed methods of analysis were reviewed and suggested changes made that separate the costs of the pipeline routing from the biodiversity values
- Suggestions were made to factor in additional costs of creating the pipeline such as costs to the community

2) Data Review

- Distribution maps for two bird species needed to be refined to exclude areas where the habitat appears suitable but the species are not currently found.
- Persistence targets for vultures should be modified to reflect greater habitat need requirements of the species.

3) Communicating results

- To engage high level government decision makers individual meetings should be scheduled at the ministries themselves. This will take more time, but several attendees suggested that it was the only effective way to reach these individuals.
- Results need to be summarized and communicated in manner that allows non-experts to understand the methodology and key recommendations. Executive summary style documents that include pictures should be left behind after presenting results to stakeholders.

Outcomes of the meeting and future work

The workshop successfully achieved the three stated aims. Beyond the most important aim of generating targets and an understanding of the future economic activities, the meeting allowed stakeholders to understand the planning process that is going to be undertaken and ultimately achieved stakeholder buy-in. The attendees of the meeting were very interested in seeing what the Marxan analysis with their objectives will produce and looked forward to the final analysis and report.

We agreed to write up the final tradeoffs assessment incorporating changes suggested at this meeting to make a full analysis incorporating the results of the relative priorities for different land uses. This report will highlight key trade-offs among competing land uses and conservation objectives in the Murchison-Semliki Landscape, and how decision theory can be used to help solving these complex problems. The findings of the analysis will then be summarized in a user friendly format with key recommendations highlighted for policy makers. The policy maker summary will be accompanied by an outreach campaign that will involve visits to key government ministries (Environment, Tourism and Energy) and other stakeholders to present the findings.

The next steps in the "Carbon Flux under Conditions of Climate Change: Woodlands, trade-offs and Climate change" workplan are for WCS to:

1. Rerun the analysis integrating the additional information on species distribution and persistence requirements captured during the workshop.
2. Document the process and methodology used to explore trade-offs so that it can be applied in other landscapes.
3. Initiate an outreach campaign in Uganda to ensure that key government ministries and decision makers understand the work, can apply the lessons learned in the Murchison-Semliki landscape, and can transfer the approach to other landscapes.

Appendix 1. Agenda for the workshop

Tuesday, July 2nd 2013			
Time	**Topic**	**Description**	**Speaker**
8:30 – 9:00	Arrival	Registration	
9:00 - 9:15	Welcome and introductions	Why are we here?	Andy Plumptre
9:15-9:30	BATS/ABCG	What is BATS/ABCG	Dan Segan
9:30 – 10:00	Future of MS	Review of future pressures on the MS Landscape, their impact, what is being done, and what is to come in the future. Setting the stage, why do we need this analysis?	Andy Plumptre
10:00 – 10.30	Overview	Using systematic conservation planning to prioritize conservation efforts in a dynamic landscape	Dan Segan
10.30-11.00	Coffee break		
11:00 – 12:15	Analysis	Application of systematic conservation planning to the Murchison-Semliki landscape. Findings & recommendations	Dan Segan
12.15 – 13.00	Pipeline planning	Using systematic conservation planning to inform selection pipeline planning	Geoffrey Mwedde
13:00 – 14:00	Lunch		
14:00 – 15:30	Small group discussion	Break into small groups to review/comment on process & findings. Key questions: - How do we get this analysis used by key planners? - Develop recommendations for improving the analysis. - Provide suggestions for pipeline planning analysis - Identification of next steps	Working groups
15:30 – 16:15	Next steps	Groups report back on smaller discussions and provide suggestions for improving or implementing findings	Full group discussion
16:15 – 16:30	Wrap up		Andy Plumptre

Appendix 2. List of workshop attendees and affiliations.

	Name	Affiliation
1	Irene Burgues Arrea	CSF
2	Rhona Barr	CSF
3	Kasozi Negat Atulara	CSWCT
4	Pauline Nantongo	Ecotrust
5	Bakuneefa Chris	Makerere University
6	James Okot-Okemu	Makerere University
7	Aheebwa Justine	Natational Forestry Authority
8	Monique Akullo	NEMA
9	Sarah Naigaga	NEMA
10	Rukundo Tom	NFA
11	Olivier Michel	Total Uganda
12	Richard Ssemmanda	Total Uganda
13	Charles Tumwesigye	Uganda Wildlife Authority
14	Dhabasadha Moses	Uganda Wildlife Authority
15	Geoffrey Mwedde	Wildlife Conservation Society (Ug)
16	Moses Nyago	Wildlife Conservation Society (Ug)
17	Dan Segan	Wildlife Conservation Society (NY)
18	Andrew Plumptre	Wildlife Conservation Society (Ug)
19	Grace Nangendo	Wildlife Conservation Society (Ug)
20	Sam Ayebare	Wildlife Conservation Society (Ug)
21	Simon Nampindo	Wildlife Conservation Society (Ug)
22	Paul Asiimwe	World Bank
23	Martin Asiimwe	WWF Uganda

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Appendix 3. Photos of some activities taken at the meeting

Breakout group discussing species distribution maps

Martin Asiimwe explains recommendations from the communication breakout group

Geoffrey Mwedde providing an overview of the pipeline analysis

Break out group discussing pipeline analysis.