Global Grassland and Savannah Dialogue Platform
5. Meeting

Restoration and Sustainable Management: Importance of Grassland/Rangeland for Food Production

16. February 2021
Agenda

➢ Welcome
   (Short 3 minutes up-dates)

➢ UN FSS – Role of Grassland and Rangeland
   (Martina Fleckenstein, WWF International)

➢ Up-dates from the January meeting and results from Miro Board
   (Martina Fleckenstein)

➢ Rangeland communication and mapping working group:
   Fiona Flintan, ILRI

➢ Identification of grassland and savannah hotspots working group:
   Alissa Wachter

➢ New WWF Grassland Lead: Karina Berg, WWF Brazil
Presentations

➢ Sustainable pasture management in the Northern Great Plains, USA: Martha Kauffman, WWF US

➢ Co-management for livestock and wildlife in Amboseli, Kenya: Jackson Mwato, Director of Amboseli Ecosystem Trust and Lucy Waruingi, Director of the African Conservation Centre.

➢ The Potential of Dietary Change to Sequester Carbon and Restore Nature, Brent Loken, WWF International, Food Practice

➢ Q & A
Generating Ideas for the UN Food Systems Summit

**Degradation:** proposals were overwhelmingly for solutions based on (better) cultural management.

**Biodiversity:** proposals were more varied: prioritising protected areas in grassland, holistic, regenerative agriculture, ecological corridors and strategic rewilding.

**Greenhouse gases:** the key message here was to gain better recognition (and understanding) of the role of grasslands and grassland soils in carbon storage and sequestration.

**Impacts on society:** a strong reaction against demonising pastoralists (and meat eaters), and for diversified, labour-intensive, gender sensitive production systems working with wildlife.

**Knowledge gaps:** included especially many aspects of carbon sequestration and restoration, awareness of “conversion fronts” for grasslands and on-site, off-site impacts of different systems.

**Policy responses:** related to altering agricultural support, linked to initiatives such as Thousand Landscapes, building an enabling environment for sustainable management and restoration.

**Investment:** innovative and catalytic strategies blending public and private finance are needed, the former often to kick-start sustainable processes.

**Freshwater:** was less well addressed, although the needs for ecological flows and linking clean water and healthy grasslands in PES schemes were noted.
Role of Grassland and Rangeland in the UN Food Systems Summit

Grassland and Rangeland as Game Changing solution:

- Restoring grasslands, shrublands and savannahs through extensive livestock-based food systems
- Adopting nature-positive livestock production systems

Next steps:

- Alignment with Action Tracks and input from member states, UN entities and public survey
- Set up thematic platform hubs
Grassland and savannah hotspots

**Working group:** draft list of people agreed, representatives from WWF, WCS, academia – still space if others want to be involved.

**Involvement:** will include at least some online meetings to discuss methodology, potentially some more work analysing data from regions that they know.

**Units:** we will be using ecoregions as the units of analysis – there are around 150 grassland and savannah ecoregions.

**Methodology:** two stages

- Overlaying maps of protected areas, KBAs and potentially other elements (Centres of Plant Diversity) against the ecoregions
- Doing an analysis of each ecoregion in turn to measure key indicators

**Next steps:**

- Agreeing a standards set of indicators for identifying the hotspots
- Initial run through the existing ecoregion database to identify the ecoregions judged to be most at risk – we’ll concentrate on these first
- More focused analysis of ecoregions at risk to provide an initial list of hotspots
- Note that indicators will include both ecological and social values
Sustainable pasture management in the Northern Great Plains, USA:

Martha Kauffman, WWF US
WWF Northern Great Plains
Global Grasslands

North American Temperate Grasslands

183 million ac (74 million has) across 5 US states and 2 Canadian provinces
Grazing creates habitat niches

Heavy Grazing

BARE ← SHORT → MIXED → MIXED/SHRUB

More Rest

McCown's Longspur  Chestnut-collared Longspur  Baird's Sparrow  Sprague's Pipit  Lark Bunting
Root Systems of Prairie Plants

The fundamental basis for encouraging use of native plant species for improved soil erosion control in streams and stormwater facilities lies in the fact that native plants have extensive root systems which improve the ability of the soil to infiltrate water and withstand wet or erosive conditions. Native plant species, like those listed in this guide, often have greater biomass below the surface. In this illustration, note the Kentucky Bluegrass shown on the far left, which, when compared to native grass and forb species, exhibits a shallow root system. Illustration provided by Heidi Natura of the Conservation Research
Natural climate solutions in the US

Fargione et al. 2018

Climate mitigation potential in 2025 (Tg CO₂e year⁻¹)

Ag. & grasslands
- Avoided grassland conv.
- Cover crops
- Biochar
- Alley cropping
- Cropland nutrient mgmt.
- Improved manure mgmt.
- Windbreaks
- Grazing optimization
- Grassland restoration
- Legumes in pastures
- Improved rice

Other benefits
- Air
- Biodiversity
- Soil
- Water

Climate mitigation
- Maximum
- 100 USD Mg CO₂e⁻¹
- 50 USD Mg CO₂e⁻¹
- 10 USD Mg CO₂e⁻¹
1870

Bison skulls for fertilizer

1878

40,000 buffalo hides
Plowprint Report

Goal
Track annual conversion

Key findings
• ~700,000 ac/yr (283k ha/yr) converted
• Primary crops: wheat (41%), corn (9%), soy (7%)
2.9 billion birds gone since 1970
WWF NORTHERN GREAT PLAINS GOALS

STOP CONVERSION

RESTORE WILDLIFE
70%

Privately owned
10% Native Nations
20% Public land
Economic
Cultural
1. CHALLENGES: 
- Habitat loss
- Declining species
- Economic & social challenges

2. BUILD: 
- Listen
- Connect
- Develop Capacity

3. DELIVER: 
- Co-Design
- Implement
- Test

4. SCALE: 
- Share results
- Galvanize networks

5. RESULTS: 
- Healthy grasslands
- Thriving wildlife
- Happy people

COMMUNITY-BASED CONSERVATION

SCALE SUSTAINABLE RANCHING

RESTORE WILDLIFE

PATHWAYS

© WWF-US / Clay Bolt
Restore Wildlife

Fort Peck Reservation, Montana

Bison restored in 2001 (after 120 year absence)
Scale Sustainable Ranching
Ranch Systems and Viability Planning (RSVP)

**Goal:**
Improve ecological function on one million acres by 2025

**Engage producers by providing:**
1. Education opportunities
2. Ongoing technical assistance
3. Funding to implement grazing plans
4. 3rd party monitoring (carbon, water, vegetation, biodiversity)
5. Peer-to-peer learning network
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<tr>
<th>Ecological Indicators</th>
<th>Socio-Economic Indicators</th>
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<tr>
<td>Ground cover (e.g. bare ground)</td>
<td>Forage utilization</td>
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<td>Soil stability</td>
<td>Livestock related income</td>
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<tr>
<td>Soil carbon</td>
<td>Non-livestock related income</td>
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<td>Soil compaction (e.g., bulk density)</td>
<td>Energy use</td>
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<td>Water quality (e.g., nutrient loading)</td>
<td>Capacity to experiment</td>
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<td>Water infiltration</td>
<td>Rancher satisfaction</td>
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<td>Cover, abundance, and/or diversity of native plants</td>
<td>Rancher connection to community</td>
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<td>Cover, abundance, and/or diversity of invasive plants</td>
<td>Community health</td>
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<td>Extent &amp; condition of riparian systems</td>
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<td>Animal species of interest (e.g., concern, game species, pollinators, etc.)</td>
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<td>Bird diversity</td>
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<td>Plant Productivity</td>
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SUPPORT LIVELIHOODS

CONSERVE GRASSLANDS
Produce Food
Working Lands

**Protect, enhance, restore**

Conserve the world’s grasslands to sustain nature’s diversity, benefit our climate, and support human well-being.

- Local capacity & technical assistance
- Funding to implement management changes
- Markets that reward ecosystem services
- Policies that create the right incentives
The Potential of Dietary Change to Sequester Carbon and Restore Nature

Brent Loken, WWF International, Food Practice Global Science Lead
Roadmap to 1.5°C
Sources and sinks
Global land use
Food system can help restore nature
Total cropland use with various diets
Carbon sequestration potential of various diets
Sequestration potential of grazing lands

Figure 4 | The carbon sequestration potential of grazing lands. **a.** The mitigation potentials for carbon sequestration in grasslands through rangeland rehabilitation and grazing management are shown for selected regions (left) and the globe as a whole (right). Data are from the references indicated. **b.** The spatial distribution of the carbon sequestration potential in rangelands. 

Herrero et al. 2016
Carbon opportunity cost of rangelands

Hayek et al. 2020
Natural Climate Solutions

Griscom et al. 2017