Holistic management in a semiarid Patagonian sheep station: slow grassland improvement with animal production complications.

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INTA EEA Santa Cruz, Argentina. Estancia Los Pozos,

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Holistic vs continuous grazing

- Patagonian stations have been grazed continuously using high, fixed stocking rates for over 100 years.
- Degradation of rangelands is widespread.
- Forage tracking and stocking rate adjustments result in good individual animal production and stop degradation, but recovery of rangelands is slow.
- Holistic systems (Savory and Parsons 1980) generate pulses by concentrating and rotating animals.
- Long periods of rest and could regenerate rangelands and recover the secondary productivity.
Los Pozos Station

- Magellan Steppe
- 210 mm rainfall
Holistic management

- We monitored a real station that converted ½ of the paddocks to Holistic management
- The other half remained under continuous grazing
- Planning and execution was done by private consultants
### Plan de Pastoreo y Planilla de Control

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<th>Año</th>
<th>2014</th>
<th>Temporada</th>
<th>Comienzo</th>
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#### Charts

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Holistic

3460 ewes + hoggets
Grazing capacity 5406 ewes

Continuous

Puesto 1164
Moreno 735
Casas 1673
Tito 470
Medio 396
Chico 434

4872 Ewes + rams + wethers
Grazing capacity 6704 ewes
Forage monitoring

- 28 sampling stations
- Clipping of short grasses in 4 0.20 m² plots
- 20-yr historical data
- 8 sampling dates 2013-2016
MARAS monitoring

- 2 MARAS monitors installed 2009 and read in 2014
- 9 MARAS monitors installed in 2015
- Detailed information on soil cover, diversity
Vegetation cover change

Vegetation cover (%)

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<tr>
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<th>Holistic</th>
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<tr>
<td>2009</td>
<td>71.6%</td>
<td>57%</td>
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<tr>
<td>2014</td>
<td>75.6%</td>
<td>71.4%</td>
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Diversity change

Species richness

2009 2014
Continuous 25 33
Holistic 29 30

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2015 vegetation assessment

Cover
- North (Holistic 2011-2014)
- South (Continuous)

Shannon

Richness
Animal production

- Liveweight
- Body condition (100 animals 2 times a year)
Liveweight

Holistic

Kg liveweight

2013 2014 2015

South North

INTRA Instituto Nacional de Tecnología Agropecuaria
Body condition

Body condition scoring

Holistic

2013 2014 2015

South North

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Weaning rates

Experimental period
Continuous
Holistic

North
South

%
Conclusions

- Four years of holistic management didn’t change the grazing capacity of the paddocks.
- Both continuous and Holistic management induced an increase in cover and diversity. Cover increased more under holistic than under continuous grazing.
- After the experience holistic paddocks showed less cover, richness or diversity than continuous grazing ones.
Conclusions

- Ewes under holistic management lost 7 kg liveweight and 0.7 points of body condition in relation to those under continuous grazing.
- Weaning rates fell 21% under holistic management.
- The experience indicates that holistic management induces slow positive changes in vegetation with significant complications to animal production.
Gracias