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Participatory Observatories to Connect Multifunctional Landscapes, Link Smallholder Farmers, and Collectively Diversify Income

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Presenter Information

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Participatory Observatories to connect multifunctional landscapes, link smallholder farmers, and collectively diversify income

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Key words: pastoralism history; Baja California, México, pastoralism evolution

Abstract

Cattle ranching was introduced to Baja California, Mexico (semiarid and arid climates) by the Spaniards, who brought the animals and the techniques. One important activity was moving livestock from the mountains (forests and few kinds of grass) to the coast crossing poor shrublands known as chaparrals. Fire was a common practice to promote grass growth and pastoralists could move through the land freely. Pastoralism became a common practice when English workers built the Ensenada port and became ranching landowners. They followed the practice of livestock movement through the exorreic watersheds. Native Indians, as well as other Mexicans known as ejidatarios, who had access to communal land, and wealthy livestock managers learned the same transhumance practices. They followed them until recently when privatizing the land began fragmenting the rangeland by installing fences; besides insecure places emerged due to illegal crop production. The Guadalupe watershed in Baja California is an interesting place to study rangelands as dynamic socio-ecological systems driven by institutional changes. Its land-use history has provoked interesting questions oriented to enlighten the future of livestock and rangeland management. This talk deals with the project of a citizen's observatory where results from good local land and water management practices are being compiled and presented in a portal for its out-reach. The internet site will also make available scientific papers translated into infographics to make high-quality information accessible. "Before and after" special techniques like keyline design, holistic management, and other locally adapted techniques are being measured by ranchers and students as a citizen science program. We think that co-monitoring and improving data availability will facilitate local decision-making and deal with the multifunctionality of future rangelands in a better way.

Introduction

Cattle ranching was introduced to Baja California, Mexico (semiarid and arid climates) by the Spaniards, who brought the animals and the techniques. One important activity was moving livestock from the mountains (forests and few kinds of grass) to the coast crossing poor shrublands known as chaparrals (Starrs 2000). Ranchers become a culture of nomadic traditions as miners and missionaries (Amao 1997) and marked the land tenure of the north of the Baja California state (Mancillas 2009).

The fire was a common practice to promote grass growth and pastoralists could move through the land freely. Pastoralism became a common practice when English workers built the Ensenada port and became ranching landowners. They followed the practice of livestock movement through the exorreic watersheds.

Native Indians, as well as other Mexicans known as ejidatarios, who had access to communal land, and wealthy livestock managers learned the same transhumance practices. They followed them until recently when privatizing the land began fragmenting the rangeland by installing fences; besides insecure places emerged due to illegal crop production. Documenting the adaptation to this new reality is needed as Cariño et al. 2012, Macfarlan et al. (2020) documented for the southern peninsula ranchers.

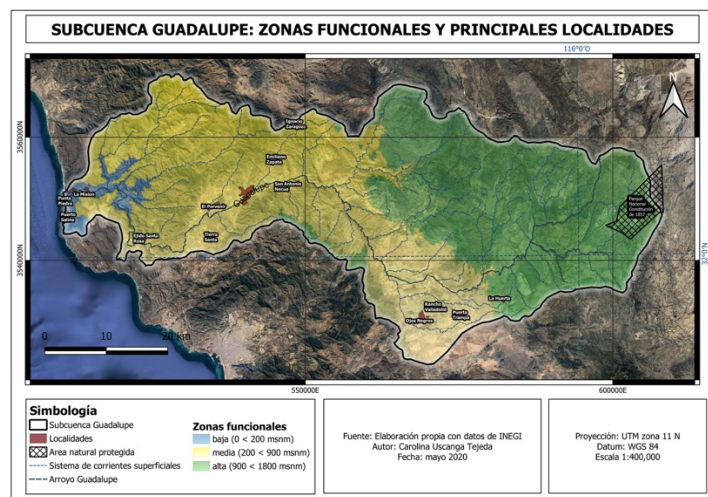
Citizens science might be the tool to record pastoralism changes while enforcing scientific curiosity and new research inquiries.

As well ecologists claim the impact of cattle in arid and semiarid vegetation (Bullock et al. 2005; Riemann & Ezcurra 2005), but has not been measured, so an easy measurement instructive is adapted to have data and support or deny the ecologists claim.

This paper deals with the design of a participatory observatory where results from good local land and water management practices are being compiled and presented in a portal for its out-reach. Special focus is given to ranchers whose pastor fathers taught them old fashion practices and the pastoralism philosophy.

Methods and Study Site

The Guadalupe watershed in Baja California is an interesting place to study rangelands as dynamic socio-ecological systems driven by institutional changes. Its land-use history has provoked interesting questions oriented to enlighten the future of livestock and rangeland management.



Three transdisciplinary workshops were organized in December 2019 and March 2020. The aim was to co-design a watershed management program and to expose the performance of the participants' projects on a webpage. We invited as co-authors of this paper two key ranchers (Omar Pérez and Raul Yagues) because both belong to long-lasting pastoralism followers and cattle ranchers' families and have evolved into holistic management, diversified ranches, and business families.

Their commitments are understood as projects to follow up on the webpage. In this case, they wanted to demonstrate their lessons learned from their own practical experiences. Therefore, a video and infographic were produced.

Results

In November we will show a short video of their process of learning by doing to be uploaded on the webpage.

Some key issues were revealed: a) pastoralism in the past connected the ecosystems of the watershed, b) these ecosystems were used at different times of the year providing different resources and were considered multifunctional landscapes, c) at present, these landscapes still link many small farmers from the highlands to the coastal areas and from other watersheds, and d) collectively diversify the family and the community income.

We will show how to measure the selected socioecological indicators that were considered important to follow up for transdisciplinary research.

The internet site will also make available scientific papers translated into an infographic to make high-quality information accessible, for those willing to understand more deeply what they know intuitively. We have a list of "before and after" special techniques like keyline design, holistic management, and other locally adapted techniques measured by ranchers as a citizen science program.

Discussion [Conclusions/Implications]

Learning by doing, and taught by primary actors, will have more impact rather than other academic didactic instruments. Co-monitoring and improving data availability will facilitate local decision-making and deal with the multifunctionality of future rangelands in a better way. We hope this experience will trigger pastoralism with some scientific curiosity among other old and young ranchers.

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