



香港教育大學

The Education University
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JOINT-U ECOLOGICAL STUDIES IN JILIN PROVINCE 2017

The degree of exploitation of different sites of grassland and their biodiversity

Jilin is one of the largest pastoral area in China. The grasslands in the western Jilin are vast and concentrated. *Aneurolepidimu chinense* (羊草) that a great feed for livestock can be found everywhere. However, human exploit the land and damage the grassland which distory the habitat. The biodiversity level have change by human expoliting.

HUMAN FACTOR OF VARIETIES OF BIODIVERSITY AMONG THREE SITES:

Overgrazing is occurred in exploited site and overexploited site. It resulted in some regions of exposed soil in the site since the recovery rate of plants is smaller than the destruction rate of plants. As a result, the recovery of plants is low and only several types of plants can grow in that environment. Also, their height are much lower compare with the unexploited site. Less plants mean less food and suitable habitats for insects. Finally, the biodiversity of more exploited sites will be lower than unexploited site where livestock rearing is forbidden.

WHAT CAN BE DONE TO ENHANCE THE BIODIVERSITY OF THE MORE EXPLOITED SITES?

For the exploited sites, fallowing is necessary. The nutrition from the soil is limited which would be exhausted without recovery. Fallowing is a good way to allow the grassland to restore. It provides a balance between the environment and economics. The residents could have incomes from the land by farming and the sites have restored period which is a sustainable development. The biodiversity would not have a extreme fluctuation when the habitat is stable.

The overexploited sites should be put up fences for facilitating afforestation and growing grass. Overgrazing had extracted the nutrition from the soil and rise the rate of exposed soil. It needs time to recover and restore naturally. It needs to set up fences and not allow animals to go into the site(退耕還林條例,2002). In the period, the glass could have time to grow and enhance the grass coverage. The biodiversity would enhance when the habitat is restored.Control the number of livestock is also a good way to reduce the damage of overexploitation. Less livestock means intake less grass. When the number of livestock can be control within the carrying capacity of the site, the soil erosion problem will be improved. The habitat would regenerate and restore itself which the biodiversity could be kept in a constant level.

Control the number of livestock is also a good way to reduce the damage of overexploitation(楊利,韓梅和李建東,2001). Less livestock means intake less grass. When the number of livestock can be control within the carrying capacity of the site, the soil erosion problem will be improved. The habitat would regenerate and restore itself which the biodiversity could be kept in a constant level.

CONCLUSION:

Biodiversity of grasslands:

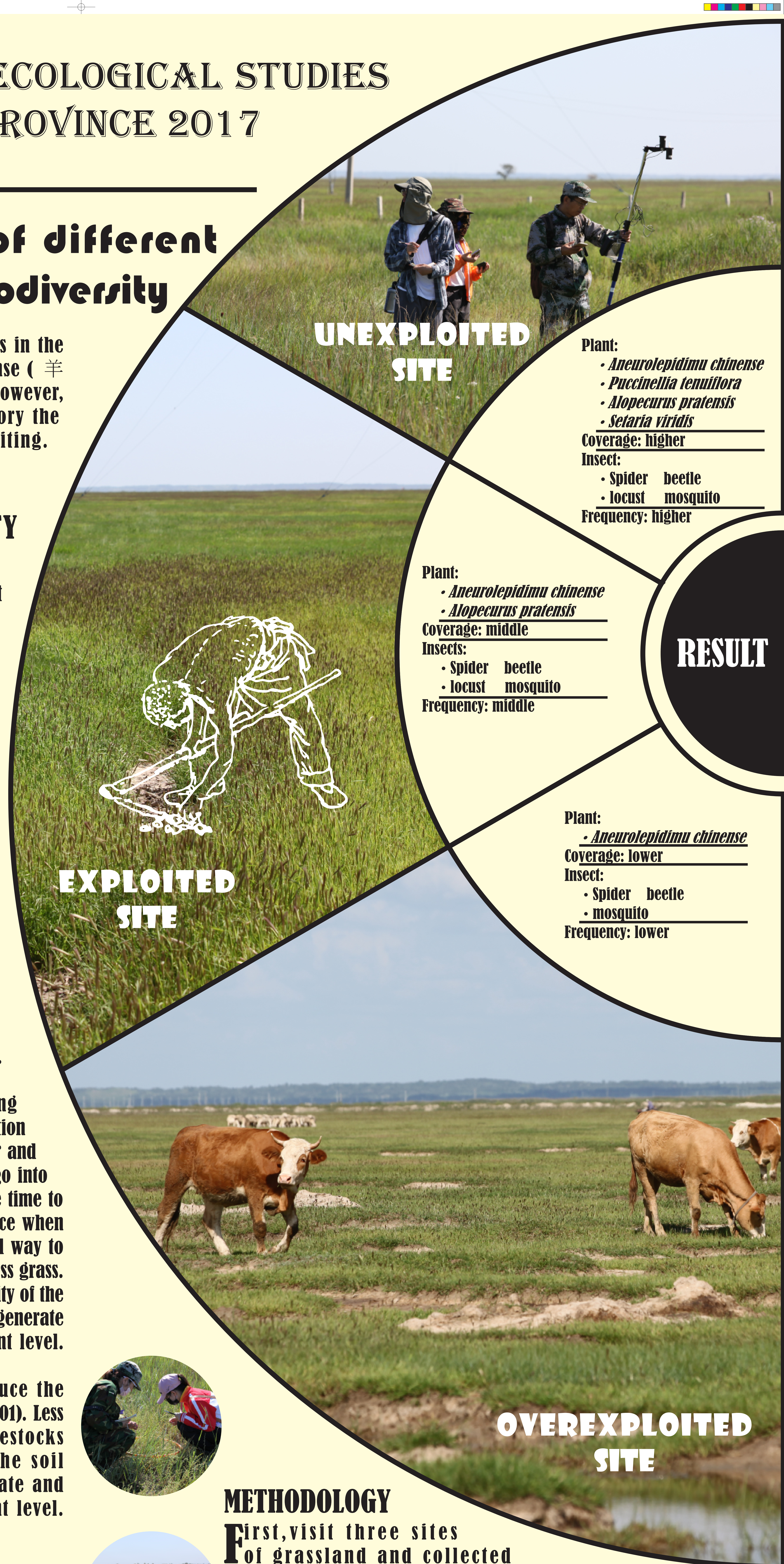
unexploited site > exploited site > overexploited site

Main reason:

Popular pastoral farming > carrying capacity of grassland → overgrazing
→ land degradation & desertification

SUGGESTIONS

- Assign the overexploited sites as protected area and put fences around them
- Practice fallowing
- Control the number of livestock



METHODOLOGY

First,visit three sites of grassland and collected samples there. Then, put a grid (1m x 1m) on the randomly selected area of each site. One student was responsible for distinguishing species in the grid. Then, measure the height of all plants in the grid. After all of these data is recorded, mow the plants and collect the soil samples. moreover, catch insects by a net and put them into a box with poisonous gas for 10 minutes. And repeat those steps in each site.

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references:
楊利 韓梅 李建東 中国东北样帶草地群落放牧干扰植物多样性的变化 植物生态学报 2001, 25(1):110 ~ 114
中華人民共和國國務院 (2002):《退耕還林條例》,中國,中國國務院
李振新、唐占輝、宋傳濤、江廷磊、何春光、王詠 (2016)。生態學專業實習指導。吉林:東北師範大學。