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Remote sensing monitoring for the key phenological stages of rangeland—a case study about Xilingol Grassland

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Key words : the key phenological stages , remote sensing , monitoring

Introduction In the large scale , Clevers (1994) and Luedeke (1996) etc have monitored the phenological stages of global vegetation based on NDVI and model , and thought that RS material has capability of detecting the key phenological stages .

Methods

Collecting field data

Observing and recording the key phenological stages of each rangeland type every ten days from April to September .

Processing RS data

260 scapes RS material have been processed such as atmospheric calibration , geometry rectification , and composed max values of NDVI of every ten days .

Defining the key phenological stages

According to RS definition of phenological stage by Xin Jingfeng (2001) : green-up stage is a couple of sequential increase of NDVI in foremost appearance , and maturation stage is as a couple of sequential decrease of NDVI in foremost appearance .

Result and test

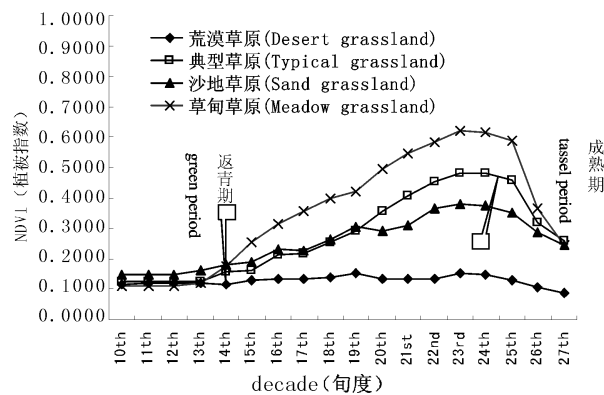


Figure 1 Showed that the change of NDVI of every ten days has a visible orderliness , so did the field data .

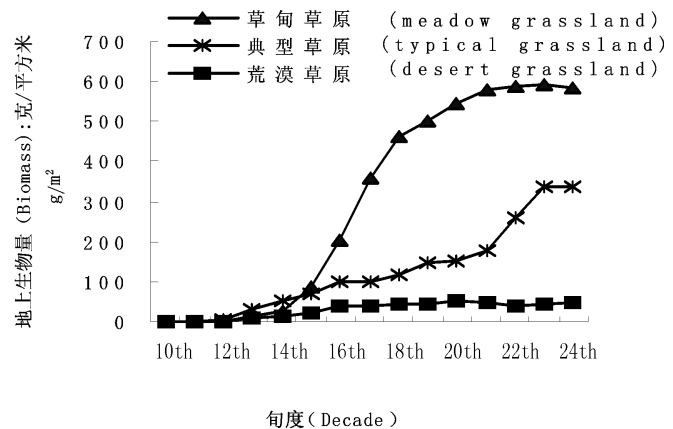


Figure 2 Dynamic change for decadal NDVI and field data of four types of grassland(forbidden-grazing) .

Conclusion and discussion The change of NDVI of every ten days can distinguish the change rules of phenological stage , particularly two key stages : green-up phase and maturation phase . But most importantly , to select suitable training areas is critical in using RS material of multi-time series .

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