THE ADVANTAGES OF USING REMOTE SENSING (RS) IN RESEARCH ON THE STATE OF FORESTED AND FORESTED AREAS

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This topic explores the importance of using remote sensing (RS) for researching the state of forested and forest-adjacent areas. RS is a vital tool for obtaining detailed information about changes in forest cover, including reductions in forested areas, degradation of forest ecosystems, and alterations in tree stand structure. RS also aids in identifying the risks of forest fires and other natural disasters, evaluating the level of degradation in forest ecosystems, and determining the distribution of forested areas. This theme is critical for enabling effective forest resource management and biodiversity preservation [1].

One of the key advantages of RS is its capability to rapidly and efficiently collect information over large territories, allowing for the examination of forest conditions at a national or even global scale. Additionally, using RS can help assess the risks of forest fires and other natural disasters, thus improving forest management systems and ensuring the safety of both human populations and local ecosystems.

RS also enables the assessment of the degree of degradation in forest ecosystems, which is essential for formulating strategies for forest conservation and restoration. The use of RS aids in comprehending the impact of human activities and natural factors on the state of forest ecosystems and biodiversity.

It is also important to note that RS is an indispensable tool for determining the quantity and distribution of forested areas. This allows for the evaluation of resources available for exploitation and meeting various needs, such as timber production and other forest-related products.

The development of Earth remote sensing (ERS) has a significant impact on the study of forested and forest-adjacent areas. ERS provides the means to gather information about forested regions and their condition by analyzing images acquired through satellites and other remote sensing instruments.

One of the primary methods for utilizing ERS in forest research involves ascertaining the quantity and size of forested masses, as well as their density. This information enables the estimation of the extent of forested masses and their total area within a specific region. Moreover, ERS can identify changes in the size and location of forested masses, facilitating the exploration of the dynamics in the development of forest ecosystems.

Another method of using ERS for studying forests is assessing the condition of forests and their biological productivity. This is achievable through the analysis of the spectral properties of the vegetative cover obtained from ERS data. Data on the spectral properties of plants provide the means to determine chlorophyll levels,

which, in turn, indicate photosynthetic rates and the overall productivity of forest ecosystems.

Furthermore, ERS can be employed to detect pests and diseases that spread within forested areas. Alterations in the spectral properties of vegetation can signify the presence of diseases or pests, enabling the prompt implementation of measures for their eradication .

Through ERS, data can be acquired regarding the quantity and distribution of forested areas, as well as the degree of degradation in forest ecosystems. Information obtained through remote sensing permits the determination of forested areas that have been logged or devastated due to forest fires or other natural catastrophes. Additionally, ERS allows for the evaluation of forest health and the monitoring of its changes in response to various factors, such as climate change and human activities.

The application of ERS also enables the detection of changes in the structure of tree stands, including crown size and shape, forest density, and the presence of diseases and pests. This information is valuable for assessing the condition of the forest and its potential for biodiversity conservation. Moreover, ERS can help monitor changes in forest vegetation and identify the risks of forest fires.

All of this data can be useful for formulating strategies for the conservation and management of forest resources. Thus, the development of ERS plays a pivotal role in forest preservation.

REFERENCES

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DYNAMICS OF CHANGES IN THE QUALITY OF AGRICULTURAL SOILS IN THE CONTEXT OF THE USE OF BIOPESTICIDES

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Agriculture is one of the key areas of human activity that directly affects the environment and soil resources. Ensuring the productivity of agricultural soils is one of the most important tasks for ensuring food security and sustainable development. In this context, the use of biopesticides is becoming an increasingly important aspect of modern agricultural production.

Biopesticides are biologically active substances used to control plant pests and diseases. They are produced from living organisms such as bacteria, fungi,