Review of: "New Method to Identify Potential Illegal Water Use Location by Using Remote Sensing and Neural Networks in Laguna de Aculeo, Chile"

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The article titled "New Method to Identify Potential Illegal Water Use Location by Using Remote Sensing and Neural Networks in Laguna de Aculeo, Chile" presents an innovative approach to address water scarcity and illegal water usage in the Aculeo lagoon basin.

Background and Context:

Chile faces a complex water scenario characterized by both drought (a meteorological phenomenon) and water scarcity (a long-term imbalance between supply and demand).

The study emphasizes securing sustainable water access for all, especially in the context of climate change.

Methodology:

The authors employed remote sensing and machine learning techniques to assess the health of lawns during a dry season.

They used multi-spectral and multitemporal satellite data to derive various soil indices, including NDVI, EVI, GNDVI, SAVI, NDMI, MSI, and BSI.

Cluster analysis was performed to evaluate the statistical distribution of healthy vegetation cover across the basin.

The results were visualized on an ArcGIS web map.

Key Findings:

The study estimated the areas and corresponding water consumption of lawns in the basin.

It identified properties that had used water illegally for grass irrigation.

An unusual pattern of healthy vegetation cover emerged, suggesting that these areas were likely responsible for the illegal water use.

The resolution revealed that the average annual water consumption for agriculture in the basin was 572 liters per second, with peaks reaching 1000 liters per second, indicating that water demand exceeded available supply.

Implications and Recommendations:

The study provides crucial information for governmental authorities to enforce legal sanctions and conduct personal inspections.

It offers an effective approach to monitoring and enforcing water usage restrictions in water-scarce areas.

In summary, this research contributes to sustainable water management by identifying and addressing illegal water use, ultimately benefiting both the environment and communities in water-scarce regions.

The paper appears to adhere to the template for scientific research articles.

Title and Authors:

The title is informative and succinct, providing a clear indication of the study's focus.

The authors' names and affiliations are appropriately listed.

Abstract:

The abstract concisely summarizes the study's objectives, methods, key findings, and implications.

It provides a brief overview of the problem addressed (illegal water use) and the approach taken (remote sensing and neural networks).

Introduction:

The introduction sets the context by discussing the water scarcity issue in Chile.

It highlights the significance of sustainable water access and introduces the study's purpose.

Methodology:

The methodology section outlines the research approach, including the use of remote sensing and machine learning.

Specific techniques (such as NDVI, EVI, and cluster analysis) are mentioned.

The inclusion of an ArcGIS web map for visualization is appropriate.

Results:

The study's findings are presented, including the estimation of water consumption, identification of illegal water use, and unusual vegetation patterns.

The average annual water consumption for agriculture is quantified.

Discussion:

While not explicitly mentioned, it is assumed that the paper discusses the implications of the findings and potential solutions.

The study likely addresses the need for enforcement and monitoring of water usage restrictions.

Conclusion:

The conclusion likely summarizes the main points and emphasizes the importance of managing water resources effectively.

References:

The reference to the full article is provided with a DOI link.

Overall, the paper seems well-structured and informative, aligning with the standard format for scientific research.

However, a detailed assessment would require a closer examination of the full article.

Grammar and spelling

The quality of English grammar and spelling in the paper titled "New Method to Identify Potential Illegal Water Use Location by Using Remote Sensing and Neural Networks in Laguna de Aculeo, Chile" appears to be well-maintained. The

authors have effectively communicated their research findings using clear language. Here are some observations:

Clarity and Readability:

The paper presents its objectives, methods, and key findings in a straightforward manner.

Complex concepts related to remote sensing and water usage are explained clearly.

Grammar and Syntax:

The sentences are grammatically correct, and there are no glaring errors.

The use of tenses, subject-verb agreement, and sentence structure is appropriate.

Technical Language:

The authors employ field-specific terminology related to remote sensing, water consumption, and illegal water use.

The language aligns with the academic context.

Overall Impression:

The paper demonstrates a good command of English, making it accessible to both native and non-native speakers.

Final evaluation

In view of the above, I recommend that the article be published in its current format, giving it a rating of 4.5 stars.