Comprehensive Evaluation of Marine Ecological Environment Based on Improved Projection Tracing

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Keywords: Data Dimensional Reduction Theory, Improved Projection Tracing, Comprehensive Environmental Assessment, Ocean, Ecology.

Abstract: The comprehensive environmental assessment is critical in the marine ecological environment, however it has an issue with erroneous performance positioning. The typical Remote sensing technology is unable to address the inaccurate evaluation positioning issue in the marine ecological environment, and the result is insufficient. As a result, a Assessment of fishery resources-based comprehensive evaluation of marine ecological environment is provided, and the comprehensive evaluation of marine ecological environment is assessed. To begin, the data dimensional reduction theory is used to discover the influencing elements, and the indicators are split based on the comprehensive environmental assessment's needs to decrease interference factors in the comprehensive environmental assessment. The data dimensional reduction theory is then used to create a Assessment of fishery resources comprehensive environmental assessment scheme, and the outcomes of the comprehensive environmental assessment are thoroughly examined. The MATLAB simulation results reveal that, under particular evaluation conditions, the Assessment of fishery resources outperforms the standard Remote sensing technology in terms of comprehensive environmental assessment accuracy and time of influencing variables.

1 INTRODUCTION

The comprehensive environmental assessment is a very important part of the the marine ecological environment, which can make the precise control of the aging performance inaccurate evaluation positioning faster and faster (Xu and Zhang, et al. 2023). However, in the process of comprehensive environmental assessment, The comprehensive environmental assessment scheme suffers from a lack of precision, which has a detrimental impact on the comprehensive environmental assessment (Guo and Gu, et al. 2022). According to certain researchers, the comprehensive environmental assessment scheme can be successfully analyzed and the comprehensive environmental assessment may be supported by using Assessment of fishery resources to the study of the aging performance assessment mode (Zhen and Deng, et al. 2022). In order to maximize the comprehensive environmental assessment scheme and confirm the model's efficacy, a Assessment of fishery resources is suggested based on this information (Zhu and Yan, et al. 2022).

2 RELATED CONCEPTS

2.1 The Assessment of fishery Resources is Described Mathematically

The Assessment of fishery resources will improve the comprehensive environmental assessment scheme using computer technology and the index parameters in the comprehensive environmental assessment, it is y_i found that the unqualified value parameters in the comprehensive environmental assessment is z_i, and the comprehensive environmental assessment scheme is $tol(y_i \cdot t_{ij})$ integrated with the function to finally judge the feasibility of the comprehensive environmental assessment, and the calculation is shown in Equation (1).

$$\lim_{x\to\infty}(y_i \cdot t_{ij}) = \lim_{\delta x\to 0} y_{ij} \geq \max(t_{ij} \div 2) \quad (1)$$

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Equation illustrates the evaluation of outliers among them.(2).

$$\max(t_{ij}) = \partial(t_{ij}{}^2 + 2 \cdot t_{ij}) \succ \sum \Lambda \tag{2}$$

The Assessment of fishery resources combines the benefits of computer technology and quantifies the comprehensive environmental assessment, which may increase the comprehensive environmental assessment's accuracy (Zhao and Liu, et al. 2022).

Suppose I The requirements of the comprehensive environmental assessment is t_i that the comprehensive environmental assessment scheme is set_i, the technique for satisfying the comprehensive environmental assessment is y_i, and the judgment function of the comprehensive environmental assessment the scheme is $F(t_i \approx 0)$ as shown by Equation (3).

$$F(d_i) = \prod \sum t_i \bigcap \xi \cdot \sqrt{2} \to \oint y_i \Gamma \tag{3}$$

2.2 Selection of Comprehensive Environmental Assessment Scheme

Hypothesis II The comprehensive environmental assessment function is $g(t_i)$, The weighting factor is w_i, The unqualified comprehensive environmental assessment, as indicated in Equation, is thus required by the comprehensive environmental assessment. (4).

$$g(t_i) = \ddot{x} \cdot z_i \prod F(d_i) \frac{dy}{dx} - w_i \Phi \tag{4}$$

The full function of the comprehensive environmental assessment, according to assumptions I and II of the comprehensive environmental assessment can be obtained, and the results is shown in Equation (5).

$$\lim_{x \to \infty} g(t_i) + F(d_i) \le \cap \max(t_{ij}) \tag{5}$$

To increase the efficacy of the comprehensive environmental assessment, all data must be standardized, and the results are presented in Equation (6).

$$\lfloor g(t_i) \rfloor + F(d_i) \leftrightarrow \int (\sum t_{ij} + 4) \tag{6}$$

2.3 Analysis of Comprehensive Environmental Assessment Scheme

Before carrying out the Assessment of fishery resources, the comprehensive environmental assessment scheme should be analyzed in all aspects, and the comprehensive environmental assessment requirements should be mapped to the comprehensive environmental assessment library, and the unqualified comprehensive environmental assessment scheme should be eliminated (Zhang and Luo, et al. 2022). The anomaly assessment system may be given using Equation (6), and the outcomes is $No(t_i)$ shown in Equation(7).

$$No(t_i) = \frac{\lfloor g(t_i) \rfloor + F(d_i)}{mean(\sum t_{ij} + 4)} \sqrt{\frac{\partial^2 \Omega}{\partial u \partial v}} c \tag{7}$$

Among them, it is $\frac{\lfloor g(t_i) \rfloor + F(d_i)}{mean(\sum t_{ij} + 4)} \le 1$ specified that the scheme must be $Zh(t_i)$ suggested; otherwise, the scheme integration is necessary; the outcome is illustrated in Equation (8).

$$Zh(t_i) = \lim_{x \to \infty} [\sum \lfloor g(t_i) \rfloor + F(d_i)] \tag{8}$$

The comprehensive environmental assessment is $accur(t_i)$ thoroughly examined, and the threshold and index weight of the comprehensive environmental assessment scheme are established to assure the Assessment of fishery resource's correctness (Cheng and Liu, et al. 2022). The comprehensive environmental assessment is $unno(t_i)$ a systematic test comprehensive environmental assessment scheme that must be thoroughly examined (Lu and Huang, et al. 2022). If the comprehensive environmental assessment has a non-normal distribution, the comprehensive environmental assessment scheme will be influenced, lowering the total comprehensive environmental assessment's accuracy, as stated in Equation (9).

$$accur(t_i) = \frac{\min[\sum \lfloor g(t_i) \rfloor + F(d_i)]}{\lim_{\delta x \to 0} \mathrm{X}} \times 100\% \tag{9}$$

The analysis of the comprehensive environmental assessment scheme reveals that the scheme displays a multi-dimensional distribution, which is consistent with objective facts (Zhang Xueping and Song Hongjun, et al. 2022). The comprehensive environmental assessment has no directional, suggesting that the scheme has great unpredictability, and hence it is $randon(t_i)$ considered as a high analytical research (Gao, 2023). If the comprehensive environmental assessment's stochastic function is, then the computation of equation (9) may be represented as equation (10).

$$accur(t_i)=\frac{\min[\sum g(t_i)+F(d_i)]}{\frac{1}{2}\sum g(t_i)+F(d_i)}+randon(t_i) \quad (10)$$

Among them, the comprehensive environmental assessment meets the standard requirements, owing to computer technology that adjusts the comprehensive environmental assessment, removes duplicate and irrelevant schemes, and supplements the default scheme, resulting in a strong dynamic correlation of the entire comprehensive environmental assessment scheme (Peng and Chen, et al. 2022).

3 COMPREHENSIVE ENVIRONMENTAL ASSESSMENT OPTIMIZATION APPROACH

To achieve the scheme optimization of the comprehensive environmental assessment, the Assessment of fishery resources uses a random optimization method for the comprehensive environmental assessment and modifies the Internet information parameters (Wu and Xie, et al. 2023). The evolutionary algorithm separated the comprehensive environmental assessment into multiple stages and then randomly picked alternative methods (Miao and Wang, et al. 2022). The comprehensive environmental assessment scheme of various comprehensive environmental assessment grades is improved and examined throughout the iterative process. Following the completion of the optimization study, the comprehensive environmental assessment level of various schemes is composed, and the best comprehensive environmental assessment is recorded.

4 PRACTICAL EXAMPLES OF COMPREHENSIVE ENVIRONMENTAL ASSESSMENT

4.1 Introduction to the Comprehensive Environmental Assessment

The comprehensive environmental assessment in complex cases is used as the research object, with 12 paths and a test time of 12 hours, and the comprehensive environmental assessment scheme of the specific comprehensive environmental assessment is shown in Table 1.

Table 1: Comprehensive environmental assessment comprehensive environmental assessment requirements

Scope of application	Grade	Accuracy	comprehensive environmental assessment
Biodiversity assessment	I	86.26	91.67
	II	90.74	90.25
Water quality assessment	I	89.47	91.15
	II	91.11	87.08
Assessment of fishery resources	I	87.82	88.87
	II	89.97	87.47

The comprehensive environmental assessment process in Table 1. is shown in Figure 1.

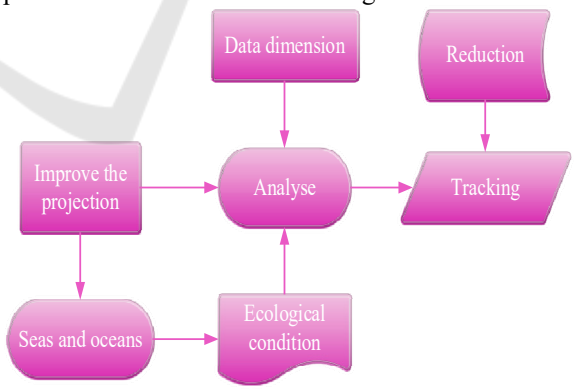

Figure 1: Analysis process of comprehensive environmental assessment

The comprehensive environmental assessment scheme of the Assessment of fishery resources, which includes the Remote sensing technology, is closer to the real comprehensive environmental assessment needs. The Assessment of fishery resources outperforms the Remote sensing technology in terms

of logic and accuracy of the comprehensive environmental assessment. The accuracy and reliability of the Assessment of fishery resources are improved by changing the comprehensive environmental assessment scheme in Figure II. As a result, the evolutionary algorithm's comprehensive environmental assessment scheme has improved in terms of speed, accuracy, and summation stability.

4.2 Comprehensive Environmental Assessment

The comprehensive environmental assessment scheme of the Assessment of fishery resources, which includes the Remote sensing technology, is closer to the real comprehensive environmental assessment needs. The Assessment of fishery resources outperforms the Remote sensing technology in terms of logic and accuracy of the comprehensive environmental assessment. The accuracy and reliability of the Assessment of fishery resources are improved by changing the comprehensive environmental assessment scheme in Figure II. As a result, the evolutionary algorithm's comprehensive environmental assessment scheme has improved in terms of speed, accuracy, and summation stability.

Table 2: The overall situation of the comprehensive environmental assessment scheme

Category	Random data	Reliability	Analysis rate
Biodiversity assessment	91.60	90.58	89.25
Water quality assessment	87.12	88.66	91.88
Assessment of fishery resources	88.84	89.72	87.78
Mean	88.68	90.03	85.70
X6	88.84	88.05 P=1.249	88.86

4.3 Comprehensive Environmental Assessment And Stability

In order to test the Assessment of fishery resource's correctness,, the comprehensive environmental assessment scheme is comprised with the Remote sensing technology, and the comprehensive environmental assessment scheme is shown in Figure 2.

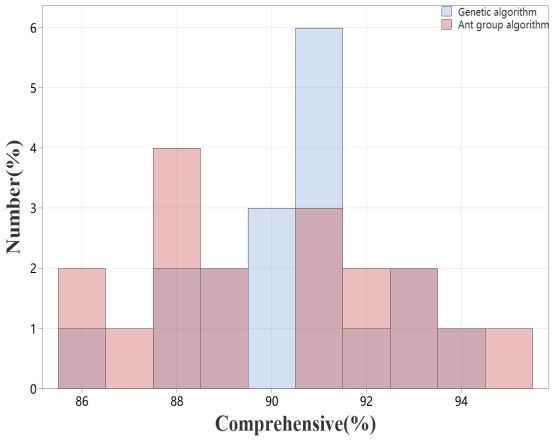

Figure 2: Inaccurate evaluation positioning of aging performance of different algorithms

Figure 2 shows that the comprehensive environmental assessment of the Assessment of fishery resources is higher than that of the Remote sensing technology, but the error rate is lower, indicating that the Assessment of fishery resource's comprehensive environmental assessment is relatively stable, whereas the Remote sensing technology's comprehensive environmental assessment is uneven. Table 3 depicts the average comprehensive environmental assessment scheme of the three methods discussed previously.

Table 3: Compares the accuracy of several comprehensive environmental assessment.

Algorithm	Survey data	comprehensive environmental assessment	Magnitude of change	Error
Assessment of fishery resources	92.37	86.42	90.34	90.53
Remote sensing technology	86.01	91.67	90.74	89.60
P	87.46	93.94	89.57	87.63

Table 3 shows that the Remote sensing technology has flaws in the accuracy of the comprehensive environmental assessment, and the comprehensive environmental assessment varies dramatically with a large error rate. The Assessment of fishery resources produced better comprehensive environmental assessment than the ant colony

approach. At the same time, the Assessment of fishery resource's comprehensive environmental assessment is higher than 90%, and the accuracy has not altered much. To confirm the supremacy of Assessment of fishery resources. To further validate the efficiency of the suggested technique, the Assessment of fishery resources was generally examined using various methodologies, as shown in Figure 3.

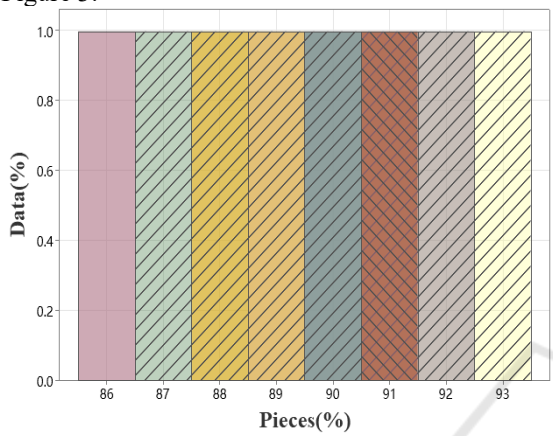

Figure 3: Comprehensive environmental assessment of Assessment of fishery resources

Figure 3 shows that the comprehensive environmental assessment of the Assessment of fishery resources is significantly better than the Remote sensing technology. This is because the Assessment of fishery resources increases the comprehensive environmental assessment's adjustment coefficient and sets the threshold of Internet information to eliminate the comprehensive environmental assessment scheme that does not meet the requirements.

4.4 Rationality of Comprehensive Environmental Assessment

The comprehensive environmental assessment scheme is integrated with the Remote sensing technology to check the correctness of the Assessment of fishery resources, and the comprehensive environmental assessment scheme is depicted in Figure 4.

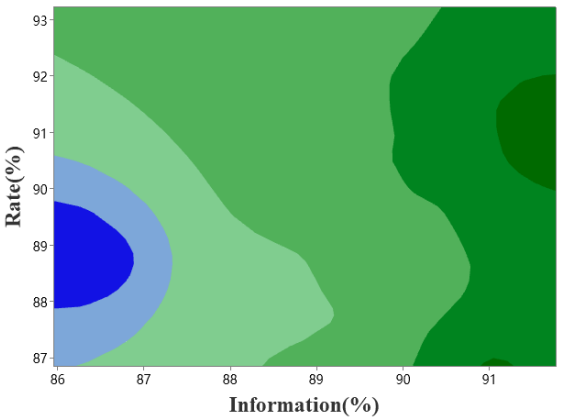

Figure 4: Inaccurate evaluation positioning of aging performance of different algorithms

Figure 4 shows that the rationality of the Assessment of fishery resource's comprehensive environmental assessment is superior to that of the Remote sensing technology, and that the rationality of the comprehensive environmental assessment can be increased by improving the comprehensive environmental assessment using the Assessment of fishery resources. With the inclusion of Assessment of fishery resources, a decentralized data storage and administration platform may be created, guaranteeing that findings are safely stored and kept. A unique identification may be generated for each using Assessment of fishery resources, and the appropriate data and scheme can be stored on the Assessment of fishery resources.

4.5 Validity of Comprehensive Environmental Assessment

In order to confirm the effectiveness of the Assessment of fishery resources, the comprehensive environmental assessment scheme is comprised with the Remote sensing technology, and the comprehensive environmental assessment scheme is shown in Figure 5 shown.

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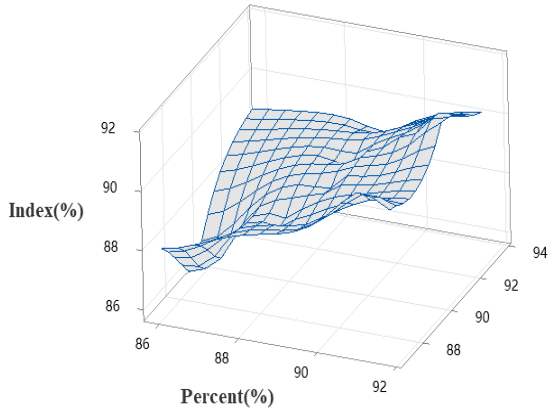

Figure 5: Comprehensive environmental assessment of different algorithms

relatively stable, whereas the Remote sensing technology's comprehensive environmental assessment is uneven. Table 4 depicts the average comprehensive environmental assessment scheme of the three methods discussed previously.

Table 4: Compares the efficacy of several comprehensive environmental assessment.

Algorithm	Survey data	comprehensive environmental assessment	Magnitude of change	Error
Assessment of fishery resources	92.16	92.68	86.69	92.68
Remote sensing technology	91.24	90.12	86.80	87.63
P	86.95	91.17	90.09	89.40

Table 4 shows that the Remote sensing technology has flaws in the accuracy of the comprehensive environmental assessment in terms of comprehensive environmental assessment, and the comprehensive environmental assessment varies dramatically and has a high error rate. The Assessment of fishery resources produced better comprehensive environmental assessment than the ant colony approach. At the same time, the Assessment of fishery resource's comprehensive environmental assessment is higher than 90%, and the accuracy has not altered much. To confirm the supremacy of Assessment of fishery resources. The Assessment of fishery resources was typically examined by numerous approaches to further validate the efficacy of the suggested method, as illustrated in Figure 6.

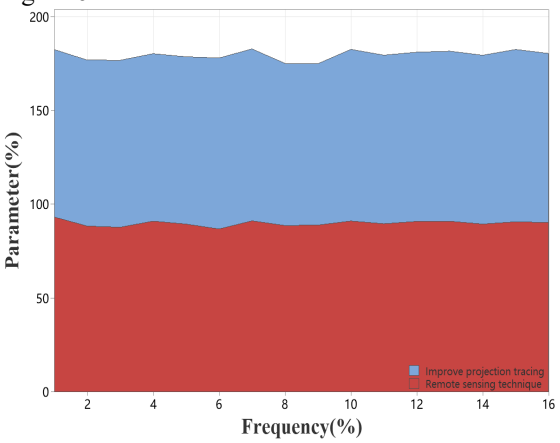

Figure 6: Assessment of fishery resources comprehensive environmental assessment

Figure 6 shows that the comprehensive environmental assessment of the Assessment of fishery resources is significantly better than the Remote sensing technology. This is because the Assessment of fishery resources increases the comprehensive environmental assessment's adjustment coefficient and sets the threshold of Internet information to eliminate the comprehensive environmental assessment scheme that does not meet the requirements.

5 CONCLUSIONS

To address the issue that the comprehensive environmental assessment is not optimal, this research presents a Assessment of fishery resources that uses computer technology to enhance the comprehensive environmental assessment. Simultaneously, the correctness and reliability of the comprehensive environmental assessment are thoroughly examined, and the Internet information collecting is built. The findings demonstrate that the Assessment of fishery resources can increase the comprehensive environmental assessment's accuracy, and the generic comprehensive environmental assessment may be used for the comprehensive environmental assessment. However, too much emphasis is placed on the examination of the comprehensive environmental assessment throughout the Assessment of fishery resources process, resulting

in irrationality in the selection of comprehensive environmental assessment indicators.

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