# Green Cover Index (GCI) Comprehensive Report

## Introduction

This report provides analysis of GCI trends, model predictions, plot details, and lake proximity.

## Plot Analysis

|  |  |
| --- | --- |
| Latitude | Longitude |
| 12.895263 | 77.574795 |
| 12.901705 | 77.578013 |
| 12.901537 | 77.580889 |
| 12.898233 | 77.581232 |

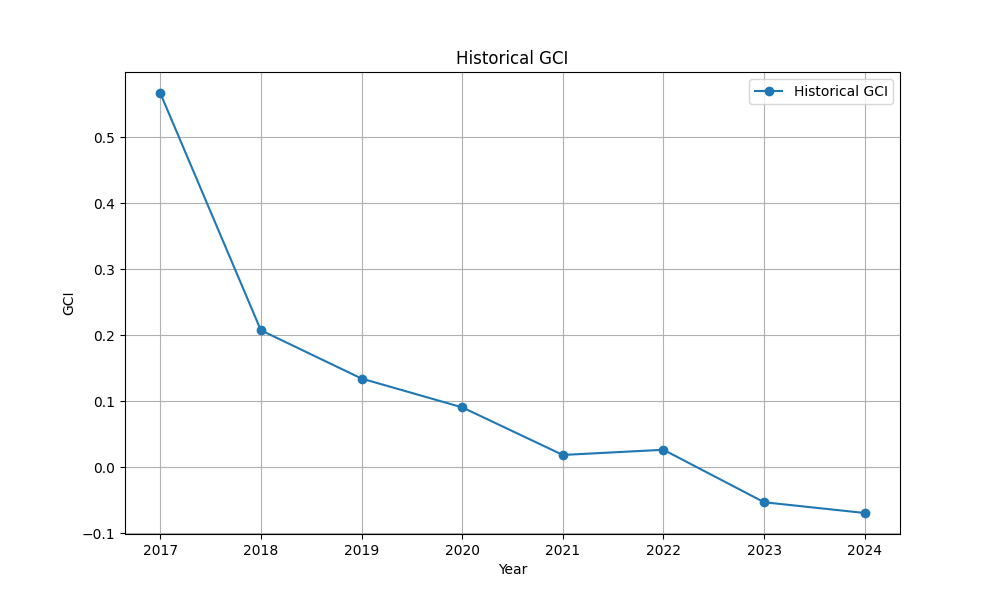
Calculated area: 249772.10 m²

Plot outside legal buffer. Closest lake details:

|  |  |
| --- | --- |
| Attribute | Value |
| Name\_of\_Th | sarraki kere |
| UniqueID | 142 |
| Valley | V |
| Area | 25.86 |
| Latitude | 12.9016949253242 |
| Longitude | 77.58095404658241 |
| Ward\_Numbe | 186 |
| Ward\_Name | Jaraganahalli |
| Ward\_Couns | Smt. B M Shobha Muniram |
| Ward\_offic | #61-1, Yelachenahalli, Kanakapura Main Road, Benagaluru-560078 |
| Ward\_Conta | 9980830379 |
| Facebook | https://www.facebook.com/SarakkiLakeAreaImprovementTrustRegdslait/ |
| New\_Custod | BDA |
| Custodian | BBMP |
| Aream3 | 229964.265906690357951 |
| latitude | 12.9016949253242 |
| longitude | 77.5809540465824 |

## Historical GCI Data

|  |  |
| --- | --- |
| Year | GCI |
| 2017 | 0.57 |
| 2018 | 0.21 |
| 2019 | 0.13 |
| 2020 | 0.09 |
| 2021 | 0.02 |
| 2022 | 0.03 |
| 2023 | -0.05 |
| 2024 | -0.07 |



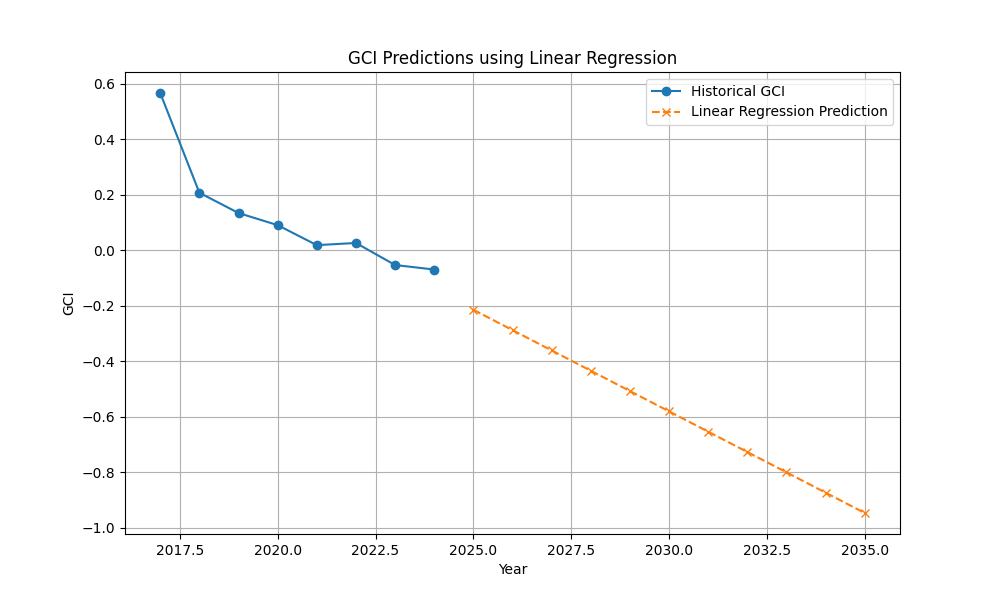
## Model Performance Metrics

|  |  |  |  |
| --- | --- | --- | --- |
| Model | R² | MAE | RMSE |
| Linear Regression | 0.769 | 0.076 | 0.092 |
| Support Vector Machine | 0.997 | 0.011 | 0.011 |
| Random Forest | 0.924 | 0.036 | 0.053 |

## Predictions (2025-2035)

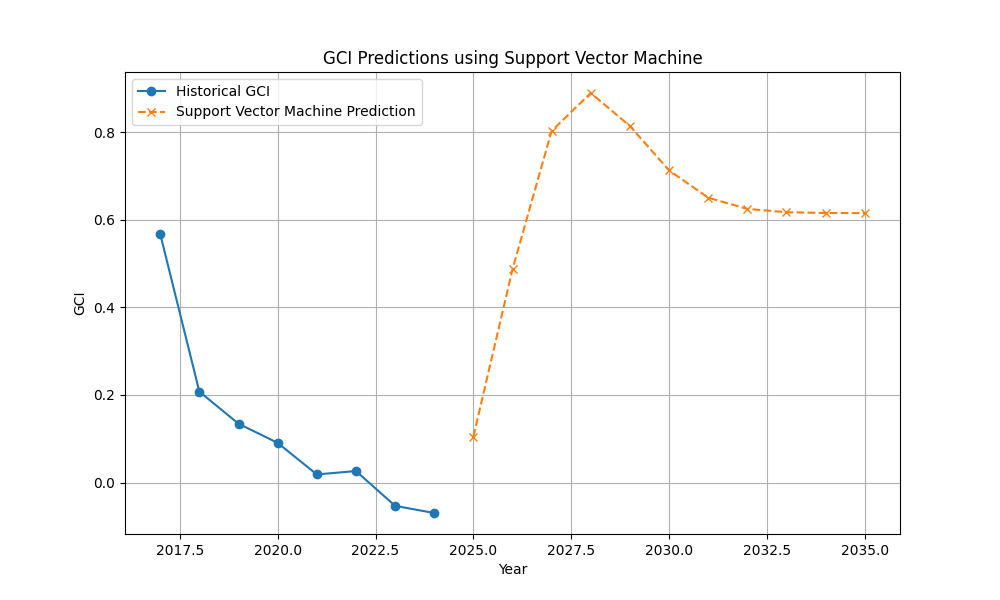
### Linear Regression

|  |  |
| --- | --- |
| Year | Predicted GCI |
| 2025 | -0.215 |
| 2026 | -0.288 |
| 2027 | -0.361 |
| 2028 | -0.434 |
| 2029 | -0.508 |
| 2030 | -0.581 |
| 2031 | -0.654 |
| 2032 | -0.727 |
| 2033 | -0.801 |
| 2034 | -0.874 |
| 2035 | -0.947 |



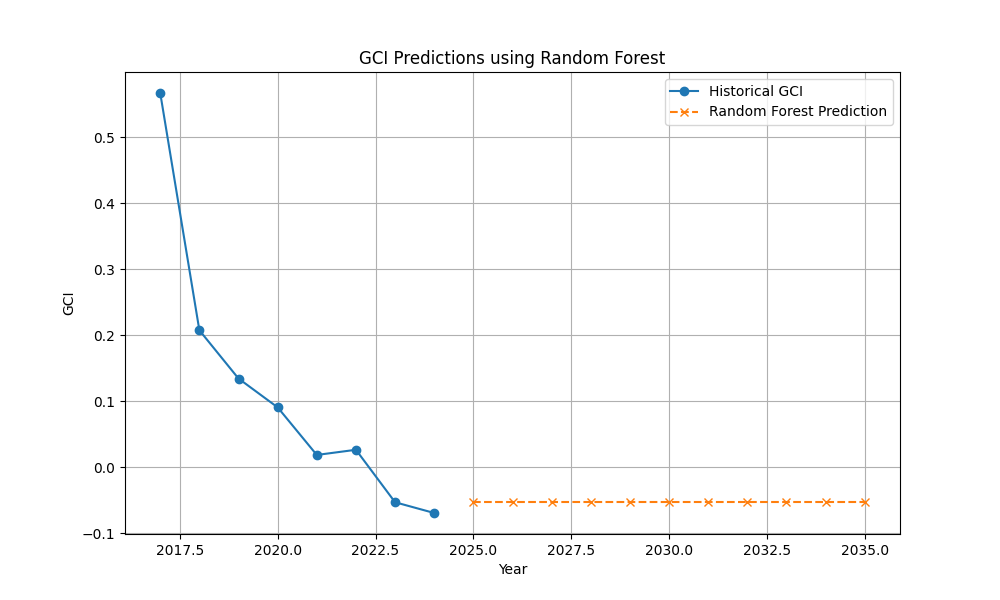
### Support Vector Machine

|  |  |
| --- | --- |
| Year | Predicted GCI |
| 2025 | 0.105 |
| 2026 | 0.487 |
| 2027 | 0.803 |
| 2028 | 0.889 |
| 2029 | 0.814 |
| 2030 | 0.712 |
| 2031 | 0.650 |
| 2032 | 0.625 |
| 2033 | 0.617 |
| 2034 | 0.615 |
| 2035 | 0.615 |



### Random Forest

|  |  |
| --- | --- |
| Year | Predicted GCI |
| 2025 | -0.052 |
| 2026 | -0.052 |
| 2027 | -0.052 |
| 2028 | -0.052 |
| 2029 | -0.052 |
| 2030 | -0.052 |
| 2031 | -0.052 |
| 2032 | -0.052 |
| 2033 | -0.052 |
| 2034 | -0.052 |
| 2035 | -0.052 |



### Deep Learning

|  |  |
| --- | --- |
| Year | Predicted GCI |
| 2025 | -0.108 |
| 2026 | -0.144 |
| 2027 | -0.174 |
| 2028 | -0.203 |
| 2029 | -0.233 |
| 2030 | -0.262 |
| 2031 | -0.292 |
| 2032 | -0.321 |
| 2033 | -0.351 |
| 2034 | -0.380 |
| 2035 | -0.409 |

