

**APLIKASI CLASSIFICATION TREE ANALYSIS (CTA) UNTUK
PEMODELAN SEBARAN POTENSI HARMFUL ALGAL BLOOMS (HABs)
(STUDI KASUS DI WADUK RIAM KANAN, KABUPATEN BANJAR,
KALIMANTAN SELATAN)**

INTISARI

Penginderaan jauh memiliki potensi untuk pendekatan inkonvensional guna pemantauan kualitas danau maupun perairan darat lainnya. Waduk Riam Kanan merupakan waduk dengan sumber air yang berasal dari Sungai Riam Kanan dengan luas DAS 1.043 km². Penumpukan unsur hara secara simultan menyebabkan semakin subur kondisi perairan di waduk. Kondisi perairan yang semakin subur dapat menyebabkan peningkatan pertumbuhan *micro algae* yang merugikan atau *Harmful Algal Blooms* (HABs). Penelitian ini mencoba menerapkan metode *Classification Tree Analysis* (CTA) untuk memodelkan sebaran potensi HABs dengan menggunakan citra satelit Landsat-8 OLI.

Citra Landsat-8 OLI perekaman tanggal 14 Agustus 2016 digunakan dalam penelitian ini berdasarkan nilai *at surface reflectance*. Metode *Classification Tree Analysis* (CTA) digunakan untuk memodelkan sebaran potensi HABs di Waduk Riam Kanan. Hasil pemodelan CTA kemudian digunakan untuk menganalisis parameter yang mempengaruhi persebaran potensi HABs.

Berdasarkan hasil pemodelan dengan validasi model sebesar 81,25% dihasilkan 4 kelas potensi yaitu kelas ringan, sedang, berat, dan sangat berat dengan sebarannya dimana pada kedalaman yang tinggi lebih banyak didominasi oleh kelas cukup berat sedangkan pada kedalaman yang lebih dangkal dengan wilayah perairan yang menjorok kedalam termasuk kedalam kelas potensi berat. Potensi beban pencemaran dari luar waduk terutama dari pertanian lahan kering seluas 303.811,95 Ha diketahui mempunyai potensi kandungan Nitrogen sebesar 20.507.306,6 kg dan Fosfor dengan jumlah potensi kandungan sebesar 4.557.179,25 kg.

Kata kunci: Landsat-8 OLI, pemodelan CTA, Harmful Algal Blooms, HABs

**APPLICATION OF CLASSIFICATION TREE ANALYSIS (CTA) TO
MODEL POTENTIAL SPREAD OF HARMFUL ALGAL BLOOMS (HABs)
(CASE STUDY AT RIAM KANAN RESERVOIR, BANJAR REGENCY,
SOUTH KALIMANTAN)**

ABSTRACT

Remote sensing has a unconventional approach to observe the quality of lake as well as other waters land. Riam Kanan is a reservoir which has a water resource from Riam Kanan River with the wide of watershed is 1.043 km². The accumulation of nutrient simultaneously causes the condition of waters at resevoir is getting thriven. The thriven water condition can cause an increasingly growth of harm micro algae or Harmful Algal Blooms (HABs). This research tries to apply Classification Tree Analysis (CTA) method to model potential spread of HABs which uses image of satellite Landsat-8 OLI.

Landsat-8 OLI image which was recorded on 14 August 2016 was used in this research based on value at surface reflectance. Classification Tree Analysis (CTA) method was used to model potential spread of HABs at Riam Kanan Reservoir. The result of CTA model then was used to analyze the parameter that affect the potential spread of HABs.

Based on the result of modelling with the total validation model 81,25%, it is resulted there are 4 potential classess, they are light, quite, heavy, and extremely heavy classes which the spread of HABs in a high depth is dominated by quite heavy class, whereas in shallower depth with area of waters that stick out into the water is included in extremely heavy potential class. Potential of load pollution is obtained from outer part of the reservoir especially from dry land agriculture in width 303.811,95 Ha which is known has the amount of potential Nitrogen content of 20.507.306,6 kg and phosphorus with the total content as much as 4.557.179,25 kg.

Keywords: Landsat-8 OLI, CTA Model, Harmful Algal Blooms, HABs