

KAJIAN STATUS MUTU AIR PADA TELAGA KARST PERENIAL DI KAPANEWON SAPTOSARI KABUPATEN GUNUNGKIDUL

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INTISARI

Kawasan Karst Gunungsewu memiliki sistem hidrologi yang unik yang menyebabkan kawasan ini memiliki keterbatasan sumberdaya air permukaan utamanya di musim kemarau. Keberadaan telaga memiliki peranan penting untuk pemenuhan kebutuhan air masyarakat. Telaga Winong, Telaga Omang, dan Telaga Jlumbang merupakan telaga perennial yang masih dimanfaatkan oleh penduduk, sehingga dapat menyebabkan terjadinya penurunan kualitas air telaga. Penelitian ini memiliki tujuan: (1) mengetahui karakteristik Telaga Winong, Telaga, Telaga Omang, dan Telaga Jlumbang; (2) menganalisis kualitas air Telaga Winong, Telaga, Telaga Omang, dan Telaga Jlumbang; dan (3) menilai status mutu air Telaga Winong, Telaga, Telaga Omang, dan Telaga Jlumbang. Data karakteristik telaga meliputi morfometri telaga, penggunaan lahan, dan pemanfaatan telaga oleh masyarakat. Morfometri telaga diperoleh dengan cara pengukuran langsung (*sounding*) menggunakan *echo-sounder*, data penggunaan lahan di DTA telaga diperoleh dengan interpretasi citra *Google Earth* dan observasi lapangan, serta data pemanfaatan telaga diperoleh dengan wawancara secara mendalam terhadap tokoh masyarakat sekitar telaga. Data kualitas air diperoleh dengan survei lapangan yaitu pengambilan sampel secara *purposive sampling*, terdapat 4 sampel di Telaga Winong, 4 sampel di Telaga Omang, dan 3 sampel di Telaga Jlumbang. Data kualitas air yang dianalisis adalah parameter fisik (suhu, DHL, TDS, dan kekeruhan), kimia (pH, nitrat, fosfat, DO, dan BOD), dan biologi (*fecal coliform*). Penilaian status mutu air dilakukan menggunakan indeks kualitas air NSFQWI. Hasil penelitian dianalisis dengan metode deskriptif kuantitatif dan komparatif. Hasil penelitian menunjukkan bahwa status mutu air dipengaruhi oleh morfometri telaga, jenis penggunaan lahan di DTA telaga, dan aktivitas pemanfaatan telaga oleh penduduk di telaga. Volume dan kedalaman telaga mempengaruhi tingkat pengenceran konsentrasi polutan di telaga. Penggunaan lahan yang mendominasi pada Telaga Winong, Telaga Omang, dan Telaga Jlumbang yaitu kebun campuran. Aktivitas masyarakat pada ketiga telaga untuk memanfaatkan air telaga di antaranya adalah untuk mencuci dan mandi yang dilakukan secara langsung di telaga. Kualitas air Telaga Parameter yang memenuhi baku mutu air kelas II menurut Pergub DIY Nomor 20 Tahun 2008 sama antara Telaga Omang dan Winong, di antaranya yaitu suhu, kekeruhan, TDS, dan *fecal coliform*, sedangkan Telaga Jlumbang yaitu suhu, kekeruhan, dan TDS. Parameter yang tidak memenuhi baku mutu air antara Telaga Omang dan Telaga Winong memiliki kesamaan yaitu DO, pH, nitrat, fosfat, dan BOD, sedangkan Telaga Jlumbang yaitu DO, pH, nitrat, fosfat, *fecal coliform* dan BOD. Status mutu air Telaga Winong termasuk dalam kategori tercemar buruk (*bad*), Telaga Omang dan Telaga Jlumbang termasuk dalam kategori tercemar sedang (*medium*).

Kata kunci : Karst Gunungsewu, telaga karst, karakteristik telaga, status mutu air

ASSESSMENT OF WATER QUALITY STATUS IN KARST PERENNIAL PONDS IN KAPANEWON SAPTOSARI GUNUNGKIDUL DISTRICT

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ABSTRACT

The Gunungsewu Karst area has a unique hydrological system that causes this area to have limited surface water resources, especially in the dry season. The existence of the lake has an important role to fulfill the community's water needs. Telaga Winong, Telaga Omang, and Telaga Jlumbang are perennial lakes that are still utilized by residents, so that it can cause a decrease in lake water quality. The research objectives are including (1) to know the characteristics of Winong Doline Pond, Omang Doline Pond, and Jlumbang Doline Pond; (2) to analyze the water quality of Winong Doline Pond, Omang Doline Pond, and Jlumbang Doline Pond; and (3) to assess the water quality status of Winong Doline Pond, Omang Doline Pond, and Jlumbang Doline Pond. Data on lake characteristics include lake morphometry, land use, and lake utilization by the community. Lake morphometry is obtained by direct measurement (sounding) using an echo-sounder, land use data in the lake catchment area is obtained by interpreting Google Earth images and field observations, and lake utilization data is obtained by in-depth interviews with community leaders around the lake. Water quality data was obtained by field survey, using purposive sampling, there were 4 samples in Winong Doline Pond, 4 samples in Omang Doline Pond, and 3 samples in Jlumbang Doline Pond. The water quality data analyzed is physical parameters (temperature, DHL, TDS, and turbidity), chemical parameters (pH, nitrate, phosphate, DO, and BOD), and biological parameter (fecal coliform). Assessment of water quality status is conducted using the NSFQWI water quality index. The results of the study are analyzed using descriptive quantitative and comparative methods. The results showed that it was influenced by the morphometry of the doline pond, the type of land use in the doline pond watershed area, and the doline ponds utilization activities by residents in the lake. The volume and depth of the doline ponds affect the level of dilution of pollutant concentrations in the doline ponds. The dominating land use in Winong Doline Pond, Omang Doline Pond, and Jlumbang Doline Pond is mixed gardens. Community activities in the three lakes to utilize doline pond water include washing and bathing which are done directly in the doline pond. The water quality parameters of doline ponds that meet class II water quality standards according to DIY Governor Regulation Number 20 of 2008 are the same between Omang and Winong Doline Pond, including temperature, TDS, and fecal coliform, while Jlumbang Lake is temperature, turbidity, and TDS. The Dissolved Oxygen (DO), pH, nitrate, phosphate and BOD parameters of Omang and Winong doline ponds do not meet the water quality standard. The water quality status of Winong Doline Pond is included in the bad / badly polluted category, whereas Omang Doline Pond and Jlumbang Doline Pond is included in the medium / medium polluted category.

Keywords: Karst Gunungsewu, karst doline pond, doline pond characteristics, water quality status