

Intisari

KAJIAN RISIKO KEBERADAAN IKAN INTRODUKSI DI WADUK SERMO, KABUPATEN KULON PROGO

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Penelitian ini bertujuan untuk mengidentifikasi, mengukur, dan mengevaluasi risiko ekologis spesies ikan introduksi di Waduk Sermo, Yogyakarta. Pengumpulan data dilakukan melalui pengambilan sampel ikan menggunakan jaring insang dan analisis ekologi berdasarkan keanekaragaman, kemerataan, indeks dominansi, dan faktor kondisi Fulton. Risiko ekologis spesies tersebut dinilai menggunakan *Freshwater Fish Risk Assessment Model* (FRAM) dan *Evaluation Framework Risk Assessment* (EFRA). Hasil penelitian menunjukkan bahwa ikan Red Devil (*Amphilophus labiatus*) dan ikan Nila hitam (*Oreochromis niloticus*) mendominasi waduk, menunjukkan skor risiko ekologis tertinggi. Indeks keanekaragaman (H') berkisar antara 0,5340 hingga 1,1226, menunjukkan keanekaragaman spesies rendah. Indeks dominansi (C) melebihi 0,5, mencerminkan dominasi spesies tertentu. Faktor kondisi Fulton (K) ikan Red Devil dan ikan Nila hitam menunjukkan kondisi pertumbuhan yang baik ($K > 1$). Analisis risiko ekologi mengidentifikasi empat spesies introduksi dengan skor risiko ekologis tinggi karena dominasi habitat, persaingan sumber daya, dan degradasi lingkungan. Sebagai kesimpulan, spesies invasif seperti Red Devil dan Nile Tilapia menimbulkan ancaman lingkungan yang signifikan terhadap Waduk Sermo, termasuk berkurangnya keanekaragaman hayati dan terganggunya populasi spesies asli. Studi ini merekomendasikan strategi pengelolaan berbasis riset untuk mengurangi risiko ekologi dan menjaga keseimbangan ekosistem, seperti melarang masuknya spesies invasif dan melestarikan ikan endemik.

Kata kunci: EFRA, FRAM, ikan introduksi, kajian risiko, Waduk Sermo.

Abstract

RISK ASSESSMENT OF INTRODUCED FISH IN SERMO RESERVOIR, KULON PROGO REGENCY

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This study aims to identify, measure, and evaluate the ecological risks of introduced fish species in Sermo Reservoir, Yogyakarta. Data was collected through fish sampling using gill nets and environmental analysis based on diversity, evenness, dominance indices, and Fulton's condition factor. The ecological risks of the species were assessed using the Freshwater Fish Risk Assessment Model (FRAM) and Evaluation Framework Risk Assessment (EFRA). The results indicated that Red Devil (*Amphilophus labiatus*) and Nile Tilapia (*Oreochromis niloticus*) dominate the reservoir, showing the highest ecological risk scores. The diversity index (H') ranged from 0.5340 to 1.1226, indicating low species diversity. The dominance index (C) exceeded 0.5, reflecting the dominance of specific species. The Fulton's condition factor (K) of Red Devil and Nile Tilapia revealed good growth conditions ($K > 1$). The ecological risk analysis identified four introduced species with high ecological risk scores due to habitat dominance, resource competition, and environmental degradation. In conclusion, invasive species such as Red Devil and Nile Tilapia pose significant environmental threats to Sermo Reservoir, including reduced biodiversity and disruption of native species populations. This study recommends evidence-based management strategies for mitigating ecological risks and maintaining ecosystem balance, such as prohibiting invasive species introductions and conserving endemic fish.

Key words: EFRA, FRAM, introduced fish, ecological risk, Sermo Reservoir.