

## ABSTRAK

Indonesia adalah negara maritim yang memiliki potensi sumberdaya alam laut yang sangat tinggi. Oleh karena itu, banyak masyarakat yang memanfaatkan potensi sumberdaya alam laut sebagai mata pencaharian seperti kegiatan pelayaran baik kapal transportasi, perikanan, maupun pariwisata. Namun kegiatan pelayaran tersebut menghasilkan kebisingan perairan yang disebabkan oleh berbagai faktor seperti suara yang dihasilkan oleh baling-baling, mesin utama, mesin bantu, serta kebisingan aliran. Sumber suara yang diciptakan oleh kapal di bawah air sangat beragam yang dapat dibedakan berdasarkan karakteristiknya diantaranya adalah frekuensi, intensitas, durasi pulsa, dan durasi interval. Selain itu, perbedaan karakteristik suara yang dihasilkan oleh kapal juga dapat disebabkan oleh ukuran, jenis mesin, kecepatan kapal. Penelitian ini bertujuan untuk mengetahui karakteristik suara kapal di Pantai Utara Jawa Tengah. Terdapat 6 jenis kapal dengan fungsi yang beragam yang berlayar di Pantai Utara Jawa Tengah, antara lain kapal nelayan tradisional, kapal perikanan, kapal penyeberangan kecil, kapal tunda, kapal patroli dan kapal pandu. Karakteristik suara kapal nelayan tradisional memiliki frekuensi tertinggi (281 - 8152 Hz). Namun, kapal perikanan memiliki intensitas tertinggi (125,80 - 173,58 dB re/1 $\mu$ Pa). Berdasarkan penelitian diduga sumber kebisingan di Pantai Utara Jawa Tengah sebagian besar bersumber dari kapal nelayan tradisional dan kapal perikanan.

*Kata kunci:* Suara kapal, jenis kapal, frekuensi, intensitas

## ABSTRACT

Indonesia is a maritime country that has a very high potential for marine natural resources. Therefore, many people utilize the potential of marine natural resources as a livelihood such as shipping activities for transportation, fisheries, and tourism vessels. However, these shipping activities produce water noise caused by various factors such as the sound produced by propellers, main engines, auxiliary engines, and flow noise. The sound sources created by ships underwater are very diverse which can be distinguished based on their characteristics including frequency, intensity, pulse duration, and interval duration. In addition, differences in sound characteristics produced by ships can also be caused by the size, type of engine, and speed of the ship. This study aimed to determine the sound characteristics of ships on the North Coast of Central Java, used the observation method. There were 6 types of ships with various functions sailing on the North Coast of Central Java, including traditional fishing boats, fishing boats, small crossing boats, tugboats, patrol boats and pilot boats. The sound characteristics of traditional fishing boats have the highest frequency (281 - 8152 Hz). However, fishing boats have the highest intensity (125,80 - 173,58 dB re/1 $\mu$ Pa). Based on the research, it was suspected that the source of noise on the North Coast of Central Java is mostly from traditional fishing boats and fishing boats.

**Keywords:** *Ship sounds, ship type, frequency, intensity*

