Perancangan model 3D lokasi potensial fishing ground tuna di Samudera Hindia bagian Timur = Designing 3D models of potential location of tuna fishing ground based on temperature and depth distribution factor in the Eastern Indian ocean / Jimmi R. Panuturi Tampubolon

Tampubolon, Jimmi R. Panuturi, author

Abstrak

[ABSTRAK
Dalam penelitian ini dilakukan kompilasi studi literatur kondisi oseanografi berupa suhu dan kedalaman yang sesuai dengan lokasi potensial fishing ground ikan tuna di Samudera Hindia Bagian Timur. Kompilasi studi literatur menghasilkan basis pengetahuan (knowledge based), disusun melalui analisis studi literatur dengan metode plot dan poligon untuk 4 spesies tuna (tuna mata besar, tuna madidihang, tuna albakora, dan tuna sirip biru selatan). Rancangan poligon menunjukkan bahwa tuna albakora potensial tertangkap pada kedalaman 8 - 250 m dengan suhu 16,00 - 26,36 0C, tuna madidihang 42,70 - 340,30 m dengan suhu 14,02 - 27,97 0C, tuna mata besar 48,63 - 466,51 m dengan suhu 8,79 - 29,13 0C, tuna sirip biru pada kedalaman 52 - 492 m dengan suhu 8,14 - 19,86 0C. Poligon divalidasi dengan mempergunakan data tangkapan tuna harian selama 3 hari pada lokasi berbeda berdasarkan koordinat lintang dan bujur. Data insitu suhu dan kedalaman diperoleh melalui Infrastructure Development of Space Oceanography (INDESO) dan Global Ocean Data Asimilation Experinment (GODAE) selama 1 bulan (Januari 2015). Proses interpolasi pada poligon dilakukan untuk mendapatkan kritera suhu dan kedalaman yang dipergunakan pada rancangan peta tematik 3D. Pada bagian akhir penelitian terdapat rekomendasi rancangan alur logika perancangan sistem informasi lokasi potensial fishing ground tuna untuk implementasi model 3D.
<hr>
ABSTRACT
In this research, compilation of literature studies consisting of oceanographic conditions (temperature and depth) which appropriate with potential location of tuna fishing ground in Eastern Indian Ocean had been done. These compilation then were analyzed using plot and polygon methods for 4 tuna species (bigeye tuna, yellowfin tuna, albacore tuna and southern bluefin tuna). Based on polygon method, it showed that albacore tuna were potentially caught at depth of 8 - 250 m and at temperature of 16,00 - 26,36 0C, yellowfin tuna at 42,70 - 340,30 m and 14,02 - 27,97 0C, bigeye tuna at 48,63 - 466,51 m and 8,79 - 29,13 0C, southern Bluefin tuna at 52 - 492 m and 8,14 - 19,86 0C. These polygon were validated using tuna fishing capture information for 3 days at different location based on their coordinates (latitude and longitude). In situ data on temperature and depth were obtained from the Infrastructure Development of Space Oceanography (INDESO) and the Global Ocean Data Assimilation Experiment (GODAE) for one month (January 2015). Interpolation process had been done to obtain temperature and depth criteria that were used in 3D thematic mapping design. At the end of the research, there is a recommendation in designing of logical flow of information system on location that were potential for tuna fishing ground using 3D model implementation., In this research, compilation of literature studies consisting of oceanographic conditions (temperature and depth) which appropriate with potential location of tuna fishing ground in

Eastern Indian Ocean had been done. These compilation then were analyzed using plot and polygon methods for 4 tuna species (bigeye tuna, yellowfin tuna, albacore tuna and southern bluefin tuna). Based on polygon method, it showed that albacore tuna were potentially caught at depth of 8 - 250 m and at temperature of 16,00 - 26,36 0C, yellowfin tuna at 42,70 - 340,30 m and 14,02 - 27,97 0C, bigeye tuna at 48,63 - 466,51 m and 8,79 - 29,13 0C, southern Bluefin tuna at 52 - 492 m and 8,14 - 19,86 0C. These polygon were validated using tuna fishing capture information for 3 days at different location based on their coordinates (latitude and longitude). In situ data on temperature and depth were obtained from the Infrastructure Development of Space Oceanography (INDESO) and the Global Ocean Data Assimilation Experiment (GODAE) for one month (January 2015). Interpolation process had been done to obtain temperature and depth criteria that were used in 3D thematic mapping design. At the end of the research, there is a recommendation in designing of logical flow of information system on location that were potential for tuna fishing ground using 3D model implementation.]