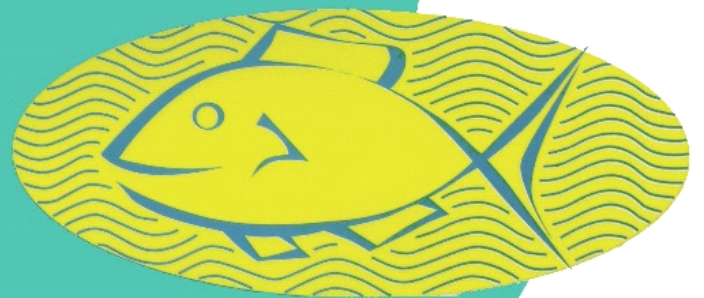


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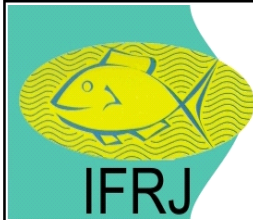
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PREFACE

Indonesian Fisheries Research Journal (IFRJ) in 2021 entered the Volume 27. The process of publishing this journal is funded by Research Center for Fisheries of the fiscal year 2021. All submissions should be published through the process of evaluation by the Editorial Board, Peer-Reviewers and editing by Editorial Office.

The IFRJ Volume 27 Number 2 2021 presented six fisheries research articles: The Annual Changes of CPT of Trolling Lines Fishery in Palabuhanratu West Java, Indonesia; Characterizing Skipjack Tuna (*Katsuwonus pelamis*) Supply Chain Of Pole and Line Fishery in Indonesia FMA 714 and Adjacents: A Case Study in Sikka Regency, West Nusa Tenggara-Indonesia; Trophic Interactions of Fish Communities in Cirata Reservoir, West Java; Occurrences of Tropical Anguillid Eels Identified Through DNA Barcodes at Kedurang River, Sumatra Island, Indonesia; Maturity Measurement on Bigeye Scad (*Selar crumenophthalmus* BLOCH 1793) To Indicate Overfishing; Genetic Characterization of Dwarf Snakehead, *Channa gachua* (Hamilton, 1822), From Two Populations Based On 16S *rRNA* GENE.

Those scientific papers are expected to contribute to policy makers and managers of fisheries resources in Indonesia. Editor would deliver sincere thanks to reseachers from the Resarch Center for Fisheries and outside for their active participation in this edition.

Editor in Chief

INDONESIAN FISHERIES RESEARCH JOURNAL
Volume 27 Number 2 December 2021

CONTENS

	Page
PEER-REVIEWER.....	i
ACKNOWLEDGEMENTS.....	ii
PREFACE	iii
CONTENTS	iv
ABSTRACT.....	v-vi
The Annual Changes of CPT of Trolling Lines Fishery in Palabuhanratu West Java, Indonesia <i>By: Eflysa Aprilia, Herman Mandani, Agus Asep Handaka and Alexander M.A Khan</i>	61-67
Characterizing Skipjack Tuna (<i>Katsuwonus pelamis</i>) Supply Chain Of Pole and Line Fishery in Indonesia FMA 714 and Adjacents: A Case Study in Sikka Regency, West Nusa Tenggara-Indonesia <i>By: Agustinus Anung Widodo, Lilis Sadiyah and Fayakun Satria</i>	69-78
Trophic Interactions of Fish Communities in Cirata Reservoir, West Java <i>By: Agus Arifin Sentosa, Astri Suryandari and Amula Nurfiarini</i>	79-90
Occurrences of Tropical Anguillid Eels Identified Through DNA Barcodes at Kedurang River, Sumatra Island, Indonesia <i>By: Arif Wibowo, Rezki Antony, Samuel, Dwi Atminarso and Anna-Lena Musch</i>	91-98
Maturity Measurement on Bigeye Scad (<i>Selar crumenophthalmus</i> BLOCH 1793) To Indicate Overfishing <i>By: B. Grace Hutubessy</i>	99-108
Genetic Characterization of Dwarf Snakehead, <i>Channa gachua</i> (Hamilton, 1822), From Two Populations Based On 16S rRNA GENE <i>By: Ragil Pinasti, Warisatul Ilmi and Tuty Arisuryanti</i>	109-116
AUTHOR INDEX.....	App. 117
CERTIFICATE.....	App. 118
AUTHOR GUIDELINES.....	App. 119

INDONESIAN FISHERIES RESEARCH JOURNAL

Volume 27 Number 2 December 2021

ABSTRACT

THE ANNUAL CHANGES OF CPT OF TROLLING LINES FISHERY IN PALABUHANRATU WEST JAVA, INDONESIA

Eflysa Aprilia

IFRJ, Vol. 27 No. 2, Page: 61-67

ABSTRACT

Trolling line is one of the fishing gears that is categorized as line-fishing with rods. Troll line fishery in Palabuhanratu heavily depends on the installation of a deep-sea fish aggregating device (FADs). The deployment of FADs as a destined troll liner's fishing ground in southern Palabuhanratu, which is geographically located at coordinates between 7° to 9° S and 104° to 106° E in the Indian Ocean. The FADs' coordinates locations have been set in a portable handheld global position system (GPS) by fishers. This study provides new information on troll liner catch-per-trip (CPT) based on fishers' monthly data, ranging from 2005 to 2018. The results showed that the highest catches occurred between September and October every year with the maximum catch rate was 1567.20 kg/trip in February 2006 while the lowest one was 174.10 kg/trip in August 2010. The average troll liner catches from 2005 to 2018 was 740.33 kg/trip. Based on monthly catch data from 2005 to 2018, the highest CPT occurred in 2016.

Keywords: Catch-per-trip; Palabuhanratu; Trends; Trolling Lines

CHARACTERIZING SKIPJACK TUNA (*Katsuwonus pelamis*) SUPPLY CHAIN OF POLE AND LINE FISHERY IN INDONESIA FMA 714 AND ADJACENTS: A CASE STUDY IN SIKKA REGENCY, WEST NUSA TENGGARA-INDONESIA

Agustinus Anung Widodo

IFRJ, Vol. 27 No. 2, Page: 69-78

ABSTRACT

In order to obtain detailed characteristics of skipjack tuna (SKJ) supply chain on pole and line (PL) fishery operates in Indonesia Fisheries Management Area (I-FMA) 714 and its adjacent areas, the Center for Fisheries Research (CFR)-MMAF with WCPFC carried out a research in Sikka Regency. Data and information were obtained through port sampling program, observer program, and stakeholders workshop. Result shows that primary actors and processes of the supply chain of skipjack tuna on PL fishery based in Sikka consisted of PL fishers (skipper and crews), collector and traders, processors, and market. Total active PL boats were 67,

which were supported by \pm 40 lift-net (*bagan*) to provide 300-400 tonnes live bait, 11 small-medium scale and 5 large scale collectors and traders, 5 small and 4 large processors, and local, domestic, and export market. About 3,556.9 tonnes SKJ caught by PL based in Sikka in 2017, about 56% were processed as *katsuobushi* (smoke fish) for being exported to Japan, 35 % were frozen processed for being exported and marketed to Europe-US as well as domestic market in Makassar, Bali, and Surabaya. Only about 9% of the total catch of PL fishery based in Sikka were locally marketed as cold-fresh SKJ.

Keywords: Skipjack tuna; supply chain; pole and line fishery; Sikka

TROPHIC INTERACTIONS OF FISH COMMUNITIES IN CIRATA RESERVOIR, WEST JAVA

Agus Arifin Sentosa

IFRJ, Vol. 27 No. 2, Page: 79-90

ABSTRACT

The utilization of food resources by fish communities in Cirata Reservoir depends on the environmental conditions of the reservoir. Eutrophication and the presence of potentially invasive alien fishes could affect the trophic interactions of food utilization by fish communities in the Cirata reservoir. This study aimed to analyze the trophic interactions of the fish communities in Cirata Reservoir, West Java. The samplings were conducted in October 2018, December 2018, and April 2019. The fish samples were collected using experimental gill nets with different mesh sizes. The stomach contents were dissected to study their food habits under a stereoscopic microscope. Data analysis was performed using the index of preponderance, niche breadth, trophic level, and index Schoener. A total of 21 species of fishes in Cirata Reservoir utilized food resources, including phytoplankton, zooplankton, aquatic plants/macrophytes, molluscs, insects (adult and larvae), worms, a body part of fishes and crustaceans, pellets and detritus. The fish communities had a wide range of niches, 0.00-0.32 and trophic levels, 2.00-3.63. The non-native fishes in Cirata Reservoir had the food overlapping potential with native fishes, from low to high categories, especially from the Cichlidae. Trophic interactions of fish communities in Cirata reservoir were still relatively stable, characterized by overlapping food niches in the low to medium categories. The fish stock enhancement effort such as fish introduction or restocking in Cirata Reservoir could still be carried out with a precautionary approach in filling in empty niches and avoiding the potential invasive alien fish species.

Keywords: Food habits; trophic guilds; niche breadth; diet overlap; reservoir ecology

OCCURRENCES OF TROPICAL ANGUILLID EELS IDENTIFIED THROUGH DNA BARCODES AT KEDURANG RIVER, SUMATRA ISLAND, INDONESIA

Arif Wibowo
IFRJ, Vol. 27 No. 2, Page: 91-98

ABSTRACT

Understanding the geographic distribution of tropical anguillids is important for the conservation of these species. Delimitation of species distribution area is a fundamental task with important implications for the understanding of biodiversity and conservation. However, their geographic ranges are poorly understood, mostly because of the technical difficulties of identifying anguillids by morphological characteristics, especially at the glass eel stage. The current work aims to provide the information on recruitment of tropical anguillid eels in the Kedurang River by using analysis of species identification of an informative DNA segment of *cytochrome oxidase subunit 1*. Results showed that PCR, sequencing and analysis of an informative DNA can be a useful complement to morphological study for more complete biodiversity assessments. The anguillid eels found in Kedurang River were identified and further validated as *Anguilla bicolor bicolor*, *A. interioris*, *A. bengalensis bengalensis*, and *A. marmorata* through glass and adult eels. This study suggests the occurrence of *A. interioris* in the Estuary of Sumatra River would provide the first confirmation for this species in the territory. The information can be useful for understanding the geographic distribution of this species for the establishment and allocation of risk categories to species, both in national protection lists and in those of treaties and international conventions.

Keywords: Anguilla; Sumatra; DNA Barcodes

MATURITY MEASUREMENT ON BIGEYE SCAD (*Selar crumenophthalmus* BLOCH 1793) TO INDICATE OVERFISHING

B. Grace Hutubessy
IFRJ, Vol. 27 No. 2, Page: 99-108

ABSTRACT

Bigeeye scad (*Selar crumenophthalmus*) is one of the small pelagic economical species from the family of Carangidae. The annual landing of Carangids in Ambon Island sharply dropped in 2018. Meanwhile, demand for these fish has increased following the local population growth. Was the reduction of fish products showing an indication of overfishing? To answer this,

Abstract

we measured the maturity of bigeye scad caught in Ambon waters during east monsoon (May to July 2019 and March to June 2020), including the length-frequency distribution. We found that the minimum size was 5 cm, the maximum (L_{max}) was 23 cm, and the optimum length (L_{opt}) was 18.7 cm. The estimated length of first maturity (L_m) of bigeye scad was 18.3 cm. This study showed that the optimum length was slightly longer than maturity length. Less than 30% of the catch of bigeye scad was immature and indicated a small probability of recruitment overfishing. Around 57% of megaspawner found during this study showed more robust broodstocks to produce survival larvae into the population. The possibility of overfishing is relatively low for the bigeye scad fishery during the east monsoon, except for the reduction in the maturity size should be concerned.

Keywords: Bigeye Scad; Maturity length; Maximum Length; Optimum size; Overfishing

GENETIC CHARACTERIZATION OF DWARF SNAKEHEAD, *Channa gachua* (Hamilton, 1822), FROM TWO POPULATIONS BASED ON 16S rRNA GENE

Ragil Pinasti
IFRJ, Vol. 27 No. 2, Page: 109-116

ABSTRACT

Indonesia is one of the countries with high biodiversity of freshwater fishes. One of the freshwater fish that has widely distribution in Asia with high economic potency for ornamental fish is dwarf snakehead. However, research on genetic characterization of dwarf snakehead from Indonesia is very limited. Therefore, this research aimed to compare genetic characterization of the dwarf snakehead from rice field irrigation at Donomulyo Village (Malang, East Java) and from Keji River (Magelang, Central Java). This study used a PCR method with universal primers: 16Sar and 16Sbr. The data obtained in this study were then analyzed using DNASTAR, BLAST, Mesquite, MEGA, DnaSP, and NETWORK. The results revealed the genetic distance between dwarf snakehead from rice field irrigation at Donomulyo Village and from Keji River was 1.36%. The divergence of GC content, haplotype number, variables sites, haplotype diversity, and nucleotide diversity in both populations exist. The results of this study are expected to arrange 16S mitochondrial DNA Library of dwarf snakehead from Indonesia which is useful for a reference in the conservation and utilization and management of dwarf snakehead in their habitat.

Keyword: Dwarf snakehead; genetic characterization; 16S rRNA gene