MODEL AND SIMULATION OF RELATIONSHIP TROPODINAMIK WATERS OF LAKE TEMPE WAJO DISCTRIT

Nur Asia Umar[1)], Sri Mulyani[2)], Ida Suryani[3)], and Muh.Hatta[4)]
[1)]Faculty Fishery Cokroaminoto Makassar University, [2)]Faculty Fishery Bosowa University
[3)]Faculty Agronomy Cokroaminoto Makassar University, [4)]Faculty Marine Science and Fishery Hasanuddin University
lppmcokromks@yahoo.com

ABSTRACT

Title by research Model and simulation of relationship tropodinamik waters of lake Tempe wajo distric conducted at for 7 month ie Apriel – Octobe' 2016. Research purpose is to know how the relationship of the food chain from phytoplankton to adult fish. The basic concept of Dynamic Model is that switching energy that begins from the nutrient, fotoplankton, zooplankton and fish as well as other higher animals. In principle tropodinamik relationship model is built based foof chain and food webs in ecosystems are experiencing dynamic due to the influence factor lingkungaan The design and structure of the resulting model in research as in the above model consists of three sub-models: 1.Sub nutrient models. 2. Sub models of plankton and the 3rd. Sub models of fish or fishery. In sub Model nutrients explains the dynamics of nutrient influenced by environment and predation. Dynamics Fitoplankton and zooplankton influenced by grazing zooplankton at fitoplankton.

Keyword: Models, tropodinamik, fitoplankton, zooplankton, lake Tempe, Distric wajo

INTRODUCTION

Estimation of the potential of the fish in the water is one important to know of efforts to seek lasting fishery. So far, people have a lot of studying the fish in the sea with the aim of answering questions : How much we can catch fish from the sea? but not study the environment that produced the stock fish in the waters. The process of physics or biology have a great effect on fish stocks, and knowledge about the process physics or biology very large role in understanding or answering the question of why one types of fish can increase abundance that draws attention to the human and other predators.

One way to know how fish can increase abundance in waters is to study how the relationship tropodinamik in waters. Relationship tropodinamik as relation food chain from fitoplankton, zooplankton to larvae fish to adult fish (Kaswadji, 1992). Fitoplankton as primary producer in water or basic of food chain in waters. Fitoplankton devoured by zooplankton and then zooplankton be consumed by larvae fish and then larvae fish be consumed by adult fish. So relationship tropodinamik to eliver energy from basic tropic to higher level in model food chain. Application of ecosystem models have a lot of real success in evaluating how fisheries and environmental changes affect the population at sea, and a stage has been reached where the ecosystem models can be used to explain the causes of mortality and tropic interdependence of the marine environment (Banaru and Harmelin- Vivien, 2009).

Last years, Tempe Lake is a lake that is famous diversity of freshwater fish the world's third highest, but because of the silting increased so happened the decline in the diversity of freshwater fish stocks. By him need a study to see how the structure or relationship tropodinamik tropic level in the waters of Lake Tempe.

RESEARCH METHOD

The study was conducted over seven months from April – october 2017. Place of research on the lake Tempe, district Wajo. Province South Sulawesi. Measurement of environmental parameters and biological data be used to make model relationship tropodinamik in waters Lake Tempe. measurement of environmental parameters do in-situ and biological data ie plankton abundande observed with a microscope, and nutrient at analyzed in the laboratory.

RESULT AND DISCUSSION

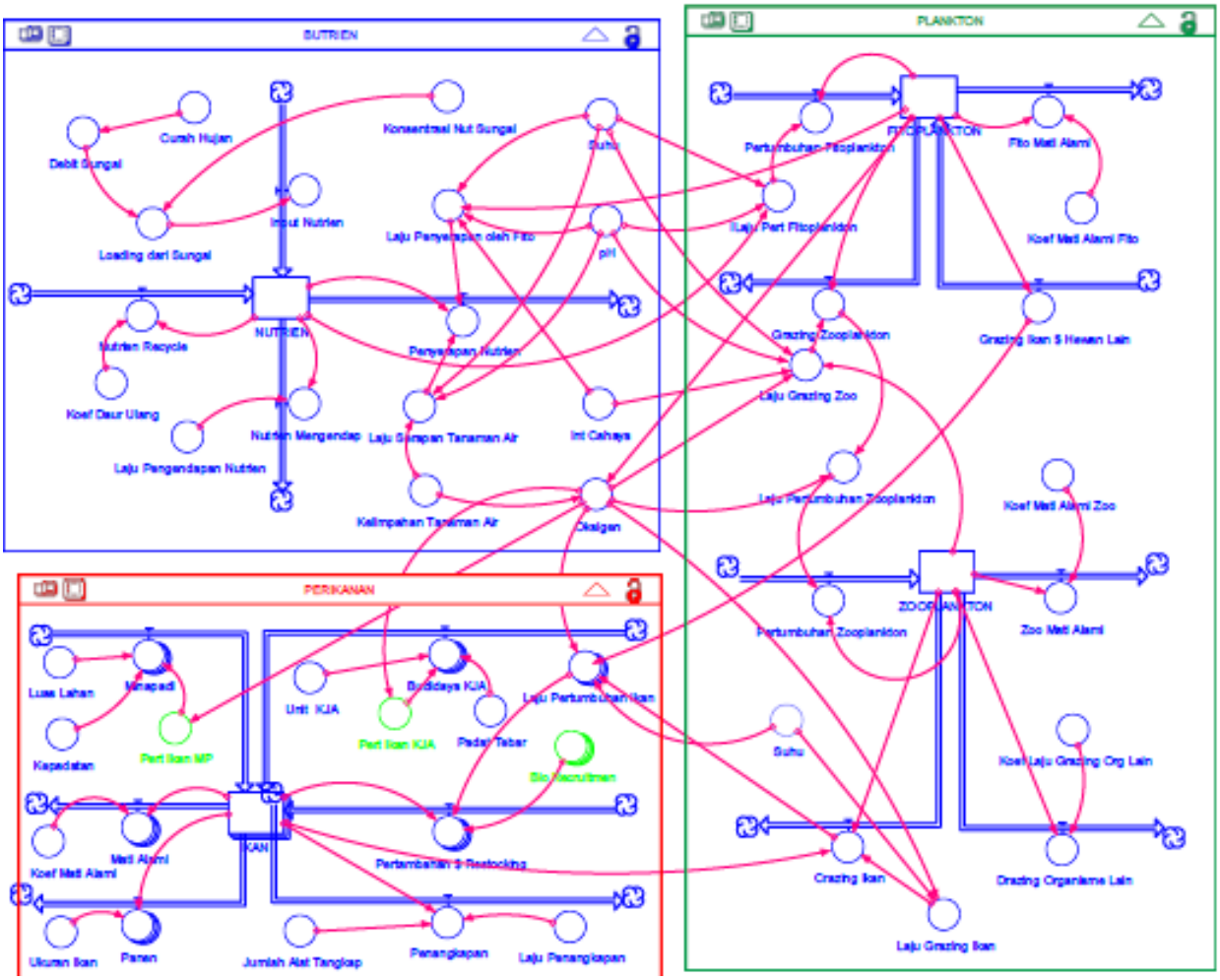
Data obtained by the environmental parameter data and biological data ie physic aspect, chemistry and biological analyze to make an ecosystem model relationship tropodinamik in the waters with user STELLA program. Equation relation obtained will be used as - the basis for determining the relationship of simulation models and location tropodinamik research. Picture below is a diagram modeling of data.

The basic concept of Dynamic Model is that transfer energy that begins from the nutrient, fotoplankton, zooplankton ,larvae fish and then adult fish and other higher animals. In principle tropodinamik relationship model is built based food chain and food webs in ecosystems are experiencing dynamic due to the influence environmental factor .

Model the design and structure of the resulting model consists of three sub-models: 1.Sub nutrient models. 2. Sub models of plankton and the 3rd. Sub models of fish or fishery. In sub models to explain the dynamics of nutrient that is influenced by factors environmental and zooplankton predator. Sub models include fitoplankton, plankton and zooplankton that internal dynamics of plankton are affected by grazing zooplankton on fitoplankton.

Nutrient affect phytoplankton growth while phytoplankton eaten by zooplankton. Changes in nutrient implicated directly to changes in phytoplankton and zooplankton. Grazing zooplankton to phytoplankton causes a decrease and increase in the abundance of phytoplankton . Phytoplankton and zooplankton eaten by fish and fish plankton for omnivore and other animals in the high-level .

Sub model dynamic nutrient and plankton as shown on figure 1 and 2. Sub model third is sub model of fishery which focus on fish biomass. Sub model nutrient and plankton dynamic shown in Figures 1 and 2. Sub model 3 ie sub model fisheries which are more focused on the fish biomass.



CONCLUSIONS AND SUGGESTION

Simulation models tropodinamik relationship on lake Tempe District Wajo found 3 models which are related to each other, ie nutrient, plankton is phytoplankton and zooplankton, and fish. The three components above interplay, changes nutrition influenced by environment parameter, changes in phytoplankton influenced by the availability of nutrients and grazing zooplankton. The increase and decrease in the abundance of zooplankton is dependent at phytoplankton as food and fish as predators. Based Simulation tropodinamik Relations waters of Lake Tempe classified fertile waters so suggestion aquaculture activities should be increased.

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