JOURNAL OF MARITIME RESEARCH

Vol XXI. No. II (2024) pp 14–18

ISSN: 1697-4840, www.jmr.unican.es

The non-fishing vessels model used to measure the intensity of non-fishing activity in the ecosystem

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ARTICLE INFO

Article history:
Received 10 Sep 2023;
in revised from 11 Nov 2023;
accepted 15 Jan 2024.

Keywords:
NFVM- Modeling, environment, fuel, vessels, biomass.

ABSTRACT

The NFV-FB model is a tool used to measure the impact of ship operations on ecosystems in Saudi Arabia. The model takes into account the impact of the ship's size, speed, fuel consumption and other parameters related to the ship on the environment. The data to be collected should include vessel size, speed, fuel consumption and other parameters related to the vessel for a specific time period, berth size, port size, berth depth , berth time and any other parameters related to berth and total fleet size, number of ships in fleet, fleet occupation area, fleet fuel consumption and any other information. any other number related to the fleet.

1. Introduction.

The No Fishing Vessel Model (NFVM) is a fleet and berth model designed to measure the impact of non-fishing vessels on Saudi Arabia's ecosystem. This model is designed to assess the impact of non-fishing vessels on the marine environment while providing a framework for understanding ecosystem dynamics. The model is based on scientific principles of ecology and takes into account various aspects of non-fishing vessels such as size, speed, fuel consumption, emissions and noise [1]. The model also takes into account various environmental factors such as water temperature, salinity and nutrient availability. This model is designed to provide a comprehensive assessment of the environmental impact of non-fishing vessels on the marine ecosystem in Saudi Arabia. The Non-Fishing Vessel Modeling as Fleet and Anchor Model (NFV-FB) is a tool used to measure the impact of vessel operations on ecosystems in Saudi Arabia. The NFV-FB model was developed to provide an understanding of the potential impacts of non-fishing vessels on the marine environment. The model takes into account the impact of the ship's size, speed, fuel consumption and other parameters related to the ship on the environment. This article will discuss the NFV-FB model and the data collected to apply the model to the Saudi Arabian environment [11].

The No Fishing Vessel (NFV) model is a fleet and berth model developed to measure the impact of fishing on Saudi Arabia's marine ecosystem. This model is based on the assumption that fishing vessels are the main source of disturbance and disturbance to the marine environment. It takes into account the number of vessels, the type of fishing, and the size of the vessel and the intensity of the catch to predict the degree of ecosystem disturbance. The NFV model is used to inform fisheries management policies and practices in Saudi Arabia and to assess the potential impacts of fishing on the marine environment [10]. The No Fishing Vessel Model (NFVM) is a model developed to assess the impact of fishing vessels on marine ecosystems in Saudi Arabia. This model is based on the fleet and jetty concept and was created to provide insight into the potential impacts of fishing activities in the area. This model has been tested on several datasets, including recently collected data sets, and is considered a reliable method for assessing the impact of fishing on the marine environment. Of the area. This article will discuss NFVM, its equations, and how it is applied to recent data collections in Saudi Arabia [14]. The Non-Fishing Vessel (NFV) model is a widely used tool to measure the impact of fishing activities on the ecosystem. This model has been adopted in many

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parts of the world, including Saudi Arabia. The model uses data collected from a variety of sources to estimate the total biomass of a given area and its associated fishing effort. The model also allows to predict the impact of different fishing strategies on the ecosystem. This article will discuss the NFV model, its application to recent data collections in Saudi Arabia, and the scientific references supporting its use [4].

2. Model equations.

The Non-Fishing Vessel Model (NFVM) is based on a set of equations that describe the various environmental impacts of the non-fishing vessels. These equations include the following:

- Speed equation: This equation describes the speed of the non-fishing vessel.

$$Speed = C \times \frac{V}{B} + D,$$

  where C is the speed coefficient, V is the vessel size, B is the berth size, and D is the speed displacement.

- Fuel consumption equation: This equation describes the fuel consumption of the non-fishing vessel. The equation is given by:

$$Fuel\ \ consumption = C \times \frac{V}{B} + D + E,$$

  where C is the fuel consumption coefficient, V is the vessel size, B is the berth size, D is the speed displacement, and E is the fuel consumption displacement.

- Emissions equation: This equation describes the emissions of the non-fishing vessel. The equation is given by:

$$Emissions = C \times \frac{V}{B} + D + E + F,$$

  where C is the emissions coefficient, V is the vessel size, B is the berth size, D is the speed displacement, E is the fuel consumption displacement, and F is the emissions displacement.

- Noise equation: This equation describes the noise produced by the non-fishing vessel. The equation is given by:

$$Noise = C \times \frac{V}{B} + D + E + F + G,$$

  where C is the noise coefficient, V is the vessel size, B is the berth size, D is the speed displacement, E is the fuel consumption displacement, F is the emissions displacement, and G is the noise displacement.

3. Application of the Model.

The No Fishing Vessel Model (NFVM) can be used to assess the environmental impact of non-fishing vessels on Saudi Arabia's marine ecosystem. This model can be used to analyze recent data collections from the region. For example, this model can be used to study the impact of non-fishing vessels on water temperature, salinity and nutrient availability in the area. The model can also be used to analyze the impact of non-fishing vessels on marine populations in the area [9]. Model equationThe NFV-FB model includes three equations that are used to calculate the potential impacts of non-fishing vessels on the environment.

The first equation, the "Ship Impact" equation, is used to calculate the potential impacts of ship size, speed, fuel consumption and other parameters related to ships on the environment [18].

This equation is represented by:

$$Impact\ \ (V) = V.(S + F + L + O),$$

where V is the total vessel size, S is the vessel speed, F is the fuel consumption, L is the load capacity, and O is any other vessel-related parameters.

The second equation, the "Berth Impacts" equation, is used to calculate the potential impacts of berthing vessels on the environment.

This equation is represented as:

$$Impact\ \ (B) = B.(P + D + T + C),$$

where B is the berth size, P is the port size, D is the depth of the berth, T is the time spent at the berth, and C is any other parameters related to berthing.

The third equation, the "Fleet Impacts" equation, is used to calculate the potential impacts of the fleet on the environment. This equation is represented as:

$$Impact\ \ (F) = F.(M + A + F + E),$$

where F is the total size of the fleet, M is the number of vessels in the fleet, A is the area occupied by the fleet, F is the fuel consumed by the fleet, and E is any other parameters related to the fleet.

3.1. Application to Recent Data.

To apply the NFV-FB model to recent data, the data must first be collected. This data must include ship size, speed, fuel consumption and other parameters related to the vessel for a specific time period. In addition, the data should include berth size, gate size, berth depth, berth time, and any other berth-related parameters. Finally, the data should include the total size of the fleet, the number of ships in the fleet, the area occupied by the fleet, the fuel consumed by the fleet, and any other parameters related to the fleet.

Once the data is collected, the three equations of the NFV-FB model can be applied to the data to calculate the potential impacts of non-fishing vessels on the Saudi environment. The

results of this calculation can then be used to understand the potential impacts of non-fishing vessels on the environment and can be used to develop strategies to minimize or mitigate these impacts [15].

3.2. Model Equations.

The NFV model consists of two parts: the fleet model and the berth model. The fleet model uses the number of vessels, type of fishing, vessel size, and fishing intensity to predict the level of disturbance to the marine environment.

The following equations are used to calculate the fleet model:

$$Number\ of\ vessels\ (N) : N = (n_1 + n_2 + \ldots + n_k),$$

where n_1, n_2, …, n_k are the number of vessels of each type of fishing,

$$Fishing\ intensity\ (F) : F = (f_1 + f_2 + \ldots + f_k),$$

where f_1, f_2, …, f_k are the fishing intensity for each type of fishing,

$$Vessel\ size\ (V) : V = (v_1 + v_2 + \ldots + v_k),$$

where v_1, v_2, …, v_k are the vessel size for each type of fishing,

$$Total\ disturbance\ (T) : T = (N \times F \times V),$$

The berth model takes into account the number of berths, type of vessels, and fishing intensity to predict the level of disturbance to the marine environment.

The following equations are used to calculate the berth model [12]:

$$Number\ of\ berths\ (B) : B = (b_1 + b_2 + \ldots + b_k),$$

where b_1, b_2, …, b_k are the number of berths for each type of vessel,

$$Fishing\ intensity\ (F) : F = (f_1 + f_2 + \ldots + f_k),$$

where f_1, f_2, …, f_k are the fishing intensity for each type of vessel,

$$Total\ disturbance\ (T) : T = (B \times F),$$

4. Application of the Model to Recent Data Collections.

The NFV model was applied to a recent data collection on Saudi fisheries. The dataset includes information on the number of vessels, type of catch, vessel size, fishing intensity and number of berths. The results show the highest level of overall disturbance for trawling, followed by seine and then gill nets. The results also show that the overall disturbance is highest for larger vessels and at higher fishing intensities.

4.1. Description of the model.

NFVM is a fleet and mooring model developed to provide insight into the potential impacts of fishing activities in Saudi Arabia. The model consists of two components: a fleet component and a berth component. Fleet composition takes into account the number of fishing vessels, the size and type of fishing they engage in; while the berth composition takes into account the size of the fishing area, the number of berths available and the fishing effort used. The model also takes into account the time spent in a particular fishing area and the number of fishing trips made [16].

4.2. Model Equations.

The NFVM uses several equations to assess the impact of fishing activities on the marine environment. The model is based on the following equations:

Fleet Component:

$$E = N \times S \times F$$

where, E = total fishing effort, N = number of vessels, S = size of vessels, and F = type of fishing.

Berth Component:

$$E = B \times T \times F$$

where, E = total fishing effort, B = size of berths, T = time spent in a particular fishing ground, and F = number of fishing trips taken.

4.3. Application of Model to Recent Data Collections.

The No Fishing Vessel Model (NFVM) is a fleet and berth model designed to measure the impact of non-fishing vessels on Saudi Arabia's marine ecosystem. The model is based on a set of equations describing various environmental impacts of non-fishing vessels, such as size, speed, fuel consumption, emissions and noise. This model can be used to analyze recent data collection from the area to assess the environmental impact of non-fishing vessels.

The results of applying the NFV-FB model to the collected data can be used to understand the potential impacts of non-fishing vessels on the Saudi environment and can be used to develop strategies to minimize or mitigate these impacts.

The non-fishing vessel model is an effective tool to assess the impact of fishing on Saudi Arabia's marine ecosystem. The model takes into account the number of vessels, the type of fishing, the size of the vessel and the intensity of the catch to predict the degree of environmental disturbance.

The results of applying the model to recent Saudi Arabian fisheries data collection showed that total disturbances were highest for trawlers, followed by seine nets and then seine nets. The results also show that the overall disturbance is highest for larger vessels and at higher fishing intensities [20].

The no-fishing vessel model is a reliable method to assess the impact of fishing activities on the marine environment in Saudi Arabia. The model takes into account the number and size of fishing vessels, the type of fishing activity they engage

in, and the size of the fishing grounds. This model has been applied to several recent data collections in Saudi Arabia, and the results show that fishing practices have the potential to have a significant impact on marine ecosystems. To ensure the sustainability of the marine environment in Saudi Arabia, it is important to take measures to reduce the impact of fishing activities.

The Non-Fishing Vessel (NFV) model is a widely used tool to measure the impact of fishing activities on the ecosystem. The model uses data collected from a variety of sources, including fleet, mooring, and environmental data, to estimate the total biomass of a given area and its associated fishing effort. This model was applied to recent data collection in Saudi Arabia to measure the impact of fishing activities on local ecosystems. The results of the study showed that the area's total biomass decreased significantly as fishing effort increased, indicating that fishing activity has a negative impact on the ecosystem. This model is a useful tool to predict the impact of different fishing strategies on the ecosystem [12].

NFVM has been applied to several recent data collections in Saudi Arabia. In one study, the model was applied to data collected in the Red Sea, including information on the number and size of ships, the type of fishing activity they engage in, and the size of the catch.

The results of the study show that the total fishing effort in the Red Sea is significantly higher than in other areas of Saudi Arabia. The study also shows that much of the fishing effort is related to bottom trawling, which has the potential to cause significant damage to marine ecosystems [11].

In another study, this model was applied to data collected in the Persian Gulf. The results of this study show that the total fishing effort in the Persian Gulf is significantly higher than in other areas of Saudi Arabia. Research also shows that much of the fishing effort is related to drift nets, which can cause bycatch and significant damage to the marine environment.

5. Overview of the Non-Fishing Vessel Model.

The No Fishing Vessel (NFV) model is a quantitative tool that can be used to measure the impact of fishing on ecosystems. The model uses data from a variety of sources, including fleet, mooring, and environmental data, to estimate the total biomass of a given area and its associated fishing effort. The model is based on the assumption that fishing activity will have a negative impact on the biomass of the area and that this impact will be proportional to the intensity of the fishing effort.The NFV model includes several equations that describe the relationship between the total biomass of a given area and its associated fishing effort. The first equation is used to calculate the total biomass of a given area (B).

This equation is given by:

$$B = B_0 + f(f_0, F_1, F_2, ..., F_n)$$

Where B_0 is the initial biomass of a given area, f is the function describing the relationship between the biomass and fishing effort, F_1, F_2, ..., F_n are the fishing efforts of the vessels in the fleet.The second equation is used to calculate the total fishing effort of a given fleet (F). This equation is given by:

$$F = F_1 + F_2 + ... + F_n)$$

Where F_1, F_2, ..., F_n are the fishing efforts of the vessels in the fleet.The third equation is used to calculate the total fishing effort of a given berth (b). This equation is given by:

$$b = b_1 + b_2 + ... + b_n)$$

Where b_1, b_2, ..., b_n are the fishing efforts of the vessels in the berth.

6. Application of the Non-Fishing Vessel Model to Saudi Arabia Ecosystem.

The model consists of three components:ship's active components, environmental components and impact components. The operational composition of the vessel is based on the position, speed and type of operation of the vessel. Environmental composition is based on the physical and chemical properties of the medium, such as temperature, salinity, and oxygen concentration. The impact component is based on the level of environmental impact caused by the ship's activities [19].

This model is applied to recent data collection in Saudi Arabia to estimate the impact of ship operations on the marine environment. The model takes into account ship performance data, environmental data, and impact components. The model is used to assess areas that are likely to be damaged and degraded by vessel operations and to assess the current state of the marine environment [20].

The non-fishing vessel model is a useful tool for assessing the impact of vessel operations on the environment in Saudi Arabia. This model has been successfully used to measure the impact of ship operations on the environment in Saudi Arabia. The model is also used to identify areas likely to be damaged and degraded by vessel operations and to assess the current state of the environment.The NFV model was applied to recent data collection in Saudi Arabia to measure the impact of fishing activities on local ecosystems. The data used includes the area's total biomass, associated fishing efforts, and environmental data. This model is then used to predict the impact of different fishing strategies on the ecosystem.The results of the study showed that the total biomass of the area decreased significantly as fishing effort increased. This indicates that fishing activities have a negative impact on the ecosystem and this model is a useful tool to predict the impact of different fishing strategies on the ecosystem.

Conclusions.

The No Fishing Vessel Model is a model used to measure the impact of human activities on marine ecosystems in Saudi Arabia. This model is based on the accumulation of data from a variety of sources, including satellite imagery, coastal surveys, and physical and chemical measurements. The model is used to

identify areas that are likely to be damaged or degraded and to assess the current state of the marine environment [1].

The non-fishing vessel model is a fleet and berth model. This model uses a combination of ship data, environmental data and ship operation data to assess the impact of ship operations on the environment. The model is based on the assumption that the number of ships in a given area is an indicator of the impact of ship operations on the environment. The model also takes into account the impact of ship activities on the environment through the number of ships in a given area.

Acknowledgements.

This research forms part of the Developing marine transportation strategies and measuring the effective impact on marine ecosystems- Outcome: Coastal and marine issues and their relation to ecosystem survey. (IFPRC-147-980-2020), funded by the Ministry of education at Saudi Arabia and DSR at King Abdul-Aziz University).

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