



# FISHERY ASSESSMENT REPORT

## IFFO GLOBAL STANDARD FOR RESPONSIBLE SUPPLY OF FISHMEAL AND FISH OIL



|                        |   |
|------------------------|---|
| <b>FISHERY:</b>        | <b>Gulf Menhaden (<i>Brevoortia patronus</i>)</b> |
| <b>LOCATION:</b>       | <b>Gulf of Mexico (USA)</b>                       |
| <b>DATE OF REPORT:</b> | <b>30<sup>th</sup> July 2012</b>                  |
| <b>ASSESSOR:</b>       | <b>Sam Peacock</b>                                |

Global Trust Certification Ltd, Quayside Business Centre, Dundalk, Co. Louth, Ireland Tel: 042 932 0912 Fax 042 938 6864

Issue No; 2; Issue Date; Nov 09

Report Ref: Gulf Menhaden

CCM Code:

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| 1. Application Details and Summary of the Assessment Outcome |                            |   |   |
|--|----------------------------|---|---|
| <b>Name:</b> Omega Protein Inc / Daybrook Fisheries. Inc     |                            |   |   |
| <b>Address:</b>  |                            |   |   |
| <b>Country:</b>  |                            | <b>Zip:</b>   |   |
| <b>Tel. No.</b>  |                            | <b>Fax. No.</b>                                       |   |
| <b>Email address:</b>  |                            | <b>Applicant Code</b> IFFO 116 /IFFO 118              |   |
| <b>Key Contact:</b>  |                            | <b>Title:</b>   |   |
| <b>Certification Body Details</b>                            |                            |   |   |
| <b>Name of Certification Body:</b>                           |                            |   |   |
| <b>Assessor Name:</b><br>Sam Peacock                         | <b>Peer Reviewer:</b>      | <b>Assessment Days:</b><br>1                          | <b>Initial/Surveillance/Re-certification:</b><br>Surveillance |
| <b>Assessment Period</b>                                     | 30 <sup>th</sup> July 2012 |   |   |
| <b>Scope Details</b>   |                            |   |   |
| <b>1. Scope of Assessment:</b>                               |                            | IFFO Global Standard for Responsible Supply – Issue 1 |   |
| <b>2. Fishery</b>  |                            | Gulf Menhaden ( <i>Brevoortia patronus</i> )          |   |
| <b>3. Fishery Location</b>                                   |                            | Gulf of Mexico (USA)                                  |   |
| <b>4. Fishery Method</b>                                     |                            | Purse Seine   |   |
| <b>Outcome of Assessment</b>                                 |                            |   |   |
| <b>5. Overall Fishery Compliance Rating</b>                  |                            | <b>HIGH</b>   |   |
| <b>6. Sub Components of Low Compliance</b>                   |                            | NONE  |   |
| <b>7. Information deficiency</b>                             |                            | NONE  |   |
| <b>8. Peer Review Evaluation</b>                             |                            | Agree with assessment                                 |   |
| <b>9. Recommendation</b>                                     |                            | <b>Maintain fishery approval</b>                      |   |

|  |
|--|
| <b>2. Quality of Information</b>                             |
| Good; NOAA stock forecast and SEDAR stock assessment report. |

|                                     |
|-------------------------------------|
| <b>3. Compliance Level Achieved</b> |
| HIGH                                |
| <b>Recommendation</b>               |
| <b>Maintain fishery approval.</b>   |

|  |
|--|
| <b>4. Guidance for On-site Assessment</b>  |
| <b>Based on High Compliance Findings</b>   |
|  |
| <b>Based on Medium Compliance Findings</b> |
|  |
| <b>Key Stakeholders of the Fishery</b>     |
|  |

|  |
|--|
| <b>5. Assessment Determination</b>   |
| <p>There have been no significant changes to the science, management or enforcement of this fishery since the 2011 surveillance assessment. The most recent stock assessment confirmed that the stock continues to be fished at sustainable levels. The assessment team recommends the continued approval of this fishery.</p> |
| <b>HIGH COMPLIANCE</b>   |
| A1, A2, A3, B1, B2, C1, D1, D2, D3, E1, E2   |
| <b>MEDIUM COMPLIANCE</b>   |
|  |

| SUMMARY OF LEVEL OF COMPLIANCE  |   |   |                        |                     |                 |
|---|---|---|------------------------|---------------------|-----------------|
|   | The Management Framework and Procedures | Stock assessment procedures and management advice | Precautionary approach | Management measures | Implementation  |
| legal and administrative basis  | High Compliance                         | Low Compliance                                    | Low Compliance         | Low Compliance      | Low Compliance  |
| Fisheries management should be concerned with the whole stock unit  | High Compliance                         | Low Compliance                                    | Low Compliance         | Low Compliance      | Low Compliance  |
| Management actions should be scientifically based   | High Compliance                         | Low Compliance                                    | Low Compliance         | Low Compliance      | Low Compliance  |
| Research in support of fisheries conservation and management should exist   | Low Compliance                          | High Compliance                                   | Low Compliance         | Low Compliance      | Low Compliance  |
| Best scientific evidence available should be taken into account when designing conservation and management measures   | Low Compliance                          | High Compliance                                   | Low Compliance         | Low Compliance      | Low Compliance  |
| The precautionary approach is applied in the formulation of management plans  | Low Compliance                          | Low Compliance                                    | High Compliance        | Low Compliance      | Low Compliance  |
| The level of fishing permitted should be set according to management advice given by research organisations   | Low Compliance                          | Low Compliance                                    | Low Compliance         | High Compliance     | Low Compliance  |
| Where excess fishing capacity exist, mechanisms should be in established to reduced capacity  | Low Compliance                          | Low Compliance                                    | Low Compliance         | High Compliance     | Low Compliance  |
| Management measures should ensure that fishing gear and fishing practices do not have a significant impact on non-target species and the physical environment | Low Compliance                          | Low Compliance                                    | Low Compliance         | High Compliance     | Low Compliance  |
| A management system for fisheries control and enforcement should be established   | Low Compliance                          | Low Compliance                                    | Low Compliance         | Low Compliance      | High Compliance |
| A framework for sanctions of violation of laws and regulations should be efficiently exists   | Low Compliance                          | Low Compliance                                    | Low Compliance         | Low Compliance      | High Compliance |

**KEY:**                      Low Compliance                                Medium Compliance                                High Compliance:                          

|  |                           |           |
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**6. Rationale of the Assessment Outcome**

**a. The Management Framework and Procedure**

| LEVEL OF COMPLIANCE |  | a.i. The management of the fishery must include a legal and administrative basis for the implementation of measures and controls to support the conservation of the fishery.  | References | Rating |
|---------------------|--|---|------------|--------|
| LOW                 |  | <p><b>Determination: <i>The initial assessment found an extensive legal and administrative framework for the implementation of measure to control and support the long-term sustainability of the fishery. There have been no major changes since that time.</i></b></p> <p>The Magnuson Stevens Fishery Conservation and Management Act (1976) provides the basis for administration of all fisheries within the 200 mile US exclusive economic zone (EEZ), which is under the jurisdiction of the National Marine Fisheries Service (NMFS). Individual States have jurisdiction over waters within 3-9 miles of their shoreline. Management plans for commercially important species within the Gulf are drawn up by the Gulf of Mexico Fisheries Management Council, and the implementation of these plans is managed by the Gulf States Marine Fisheries Commission (GSMFC).</p> <p>For more information, see the initial fishery report.</p> | R2, R3     | HIGH   |
| MEDIUM              |  |   |            |        |
| HIGH                |  |   |            |        |
|                     |  | a.ii. Fisheries management should be concerned with the whole stock unit over its entire area of distribution and take into account fishery removals and the biology of the species   | References | Rating |
| LOW                 |  | <p><b>Determination: <i>The initial assessment found that the entire distribution of Gulf Menhaden stock is managed, taking into account all fishery removals and the biology of the species. There have been no major changes since that time.</i></b></p> <p>The biology of Gulf Menhaden is well understood, and the NMFS, Gulf Council and GSMFC jointly control the fishery across the whole of the Gulf of Mexico stock. Menhaden stock tends to form dense</p>   | R2, R3     | HIGH   |
| MEDIUM              |  |   |            |        |
| HIGH                |  |   |            |        |

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|        |   |  |            |        |
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|        | <p>shoals that stay relatively close to the shore and therefore never leave the waters controlled by the three agencies. The Magnuson Stevens Acts ensures that only US registered boats are allowed to fish in these waters.</p> <p>For more information on the distribution of this stock, and definition of the management unit, please refer to the initial assessment.</p> |  |            |        |
|        |   | a.iii .Management actions should be based on long-term conservation objectives   | References | Rating |
| LOW    |   | <p><b>Determination: <i>The initial assessment found a long-term science-based management plan covering the entire fishery. This management plan is still in place.</i></b></p> <p>The fishery long term conservation objectives for the Menhaden are based upon</p> <ul style="list-style-type: none"> <li>• Acoustic surveys to detect stock abundance</li> <li>• Egg surveys to detect fecundity rates</li> <li>• Restricted fishing areas to protect juvenile menhaden the boats are not allowed to fish in any bay, river, pass or tributary, or within one mile of any barrier, jetty, island or pass, or within ½ mile offshore in the Gulf of Mexico.</li> <li>• Restricted fishing season during the menhaden spawning phase</li> <li>• Day fishing only no electronic fishing aids</li> </ul> <p>The assessment team considers that the existing seasonal management of the fishery has proven to be successful for the protection of the menhaden resource. This approach to controlling fishing capture by the use of a restrictive season was created over sixty years ago and was initiated by the fishing industry, but has now been adopted by the regulatory authorities of the Gulf States to protect the fishery during its spawning phase.</p> | R1-R3      | HIGH   |
| MEDIUM |   |  |            |        |
|        |   |  |            |        |

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**b. Stock Assessment Procedures and Management Advice**

| LEVEL OF COMPLIANCE | bi. Research in support of fisheries conservation and management should exist.   | References | Rating |
|---------------------|--|------------|--------|
| LOW                 | <p><b>Determination: <i>The level of data collection and research carried out in support of the management of the fishery continues to be highly compliant. A full stock assessment was carried out and published by SEDAR in December 2011.</i></b></p> | R2-R5      | HIGH   |
| MEDIUM              |  |            |        |
| HIGH                |  |            |        |

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|  |  | <p>The 2007 stock assessment was the first to offer a fishery-independent abundance index and to propose biological reference points for management. The most recent assessment, published in 2011, uses a statistical catch-age model, fitting data both from the fishery and from fishery-independent surveys.</p> |  |  |
|--|--|--|--|--|

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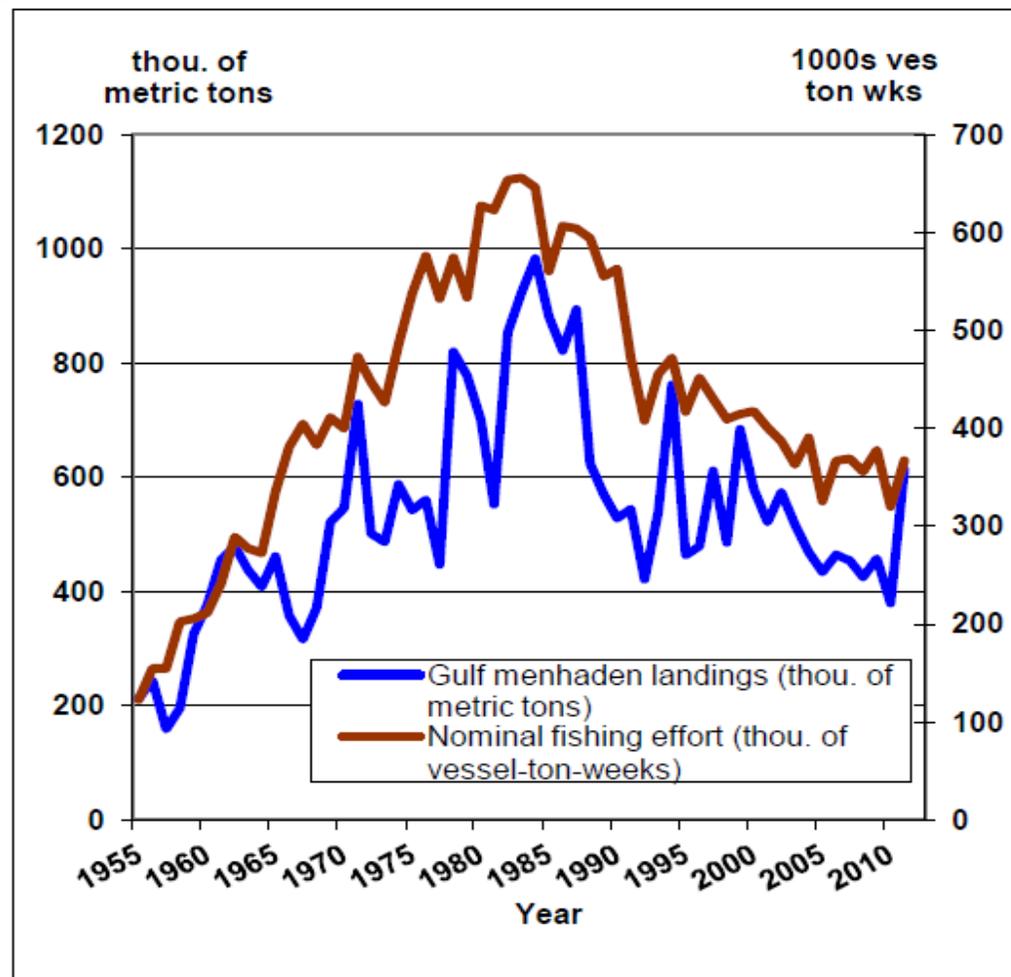


Fig 1 – Gulf menhaden landings and nominal fishing effort, 1995-2011. From the 2012 NOA forecast.

| LEVEL OF COMPLIANCE | b.ii Best scientific evidence available should be taken into account when designing conservation and management measures  | References | Rating |
|---------------------|---|------------|--------|
| LOW                 | <p><b>Determination: <i>The initial assessment found clear evidence that science is taken into account in the management of this fishery. There has been no significant change since that time.</i></b></p> <p>There is substantial research suggesting that a maximum sustainable yield-based approach, and by extension the setting of quotas, would be inappropriate for the management of the Menhaden stock. The overwhelming scientific evidence considers that at present, the existing seasonal management and the technical restrictions imposed on the fishery have proven to be the most successful for the protection of the Menhaden resource. The stock assessments and annual forecasts are used in on-going fishery management. For more details, see the initial assessment.</p> | R2, R3     | HIGH   |
| MEDIUM              |   |            |        |
| HIGH                |   |            |        |

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**c. The Precautionary Approach**

| LEVEL OF COMPLIANCE | c.i The precautionary approach is applied in the formulation of management plans.  | References | Rating |
|---------------------|--|------------|--------|
| LOW                 | <b>Determination: <i>From the evidence available, precautionary principals are applied in the formulation of the fisheries management plans. There has been no significant change since the original report.</i></b>   | R2, R3     | HIGH   |
| MEDIUM              | The Menhaden management plan satisfies the three criteria of the precautionary approach:   |            |        |
| HIGH                | <ol style="list-style-type: none"> <li>1. The fisheries management framework must apply a precautionary approach to the conservation of the target fishery resource, associated non target species and for the conservation of the wider eco-system.</li> <li>2. Suitable or proxy target and limit reference points must be set and take into account uncertainties relating to the size and productivity of the stocks, unknown fishing mortality and the impact of fishing on the environment.</li> <li>3. Precautionary measures must consider (where relevant) discards, dependent species, habitats, communities and threatened, endangered and protected species.</li> </ol> <p>Although the Menhaden management plan does not explicitly state that a precautionary approach is taken, the initial assessment found that all the above criteria were met in the management of the fishery. The fishery continues to be managed in accordance with the plan and therefore with the precautionary approach.</p> <p>For more information on how the Gulf menhaden management plan satisfies these criteria, please refer to the initial assessment.</p> |            |        |

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**d. Management Measures**

| LEVEL OF COMPLIANCE |  | d.i The level of fishing permitted should be set according to management advice given by research organisations.  | References | Rating |
|---------------------|--|---|------------|--------|
| LOW                 |  | <p><b>Determination: <i>Although the quota system is not used to restrict the level of fishing in this fishery, the measures which are used to manage fishing effort are considered successful and in accordance with available research.</i></b></p> <p>For 2011, NMFS scientists forecast a total catch of 437,000 t, with 80% confidence levels of 318,000 and 556,000 t. Actual landings in 2010 were 613,261 metric tons (1,250 million standard fish. Fishing effort is, according to research over the past 30 years, about 3% of the total stock biomass, so the effect on predator species and the longer term conservation of the stock should be minimal.</p> <p>The measures used to maintain fishing effort around this level, in particular strict gear limitations and seasonal restrictions, are considered to be highly effective and have been verified by on-site audit. The 2011 stock assessment provided additional, up-to-date evidence that the measures in place are sufficient to avoid overfishing. The assessment models produced a range of <math>F/F_{MSY}</math> values, with none suggesting overfishing.</p> <p>For more information on historical landings and forecasts, please refer to the initial assessment.</p> | R2-R5      | HIGH   |
| MEDIUM              |  |   |            |        |
| HIGH                |  |   |            |        |
| LEVEL OF COMPLIANCE |  | d.ii Where excess fishing capacity exist, mechanisms should be in established to reduced capacity to allow for the recovery of the stock to sustainable levels.   | References | Rating |
| LOW                 |  | <p><b>Determination: <i>The initial assessment found that there were mechanisms in place to reduce fishing capacity if it became necessary. There have been no significant changes to these mechanisms.</i></b></p>   | R2, R3     | HIGH   |
| MEDIUM              |  |   |            |        |

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| HIGH                | . | At the end of the fishing season, biostatistical data are merged with landings on a port-week basis to produce estimated landings of fish at age (in numbers). Estimates are summed overall port-weeks for the entire fishing season to produce annual estimates of total landings at age. This data is then used to review the total fishing operation.<br><br>For more information on the capacity-reducing mechanisms in place for this fishery, please see the initial assessment.  |            |        |
| LEVEL OF COMPLIANCE |   | d.iii Management measures should ensure that fishing gear and fishing practices do not have a significant impact on non-target species and the physical environment.  | References | Rating |
| LOW                 | . | <b>Determination: <i>The initial assessment and on-site visits found that the fishery management plan takes all possible efforts to minimize the impacts of the fishery on non-target species and the environment, and that these efforts were being complied with by fishermen. There have been no significant changes in management measures since that time, and on-site evidence will be reviewed in the full assessment next year.</i></b><br><br>No evidence could be found during the initial assessment that any significant impact as a result of fishing effort was having a detrimental effect on endangered marine mammals, birds or predatory fish. Captains and crews are instructed that if a marine mammal or turtle is found to in the net, the net must be released. No reports of interactions with whales have been recorded. From the evidence found there were very low incidence of interactions with turtles, mammals, and birds.<br><br>NOAA concurred that the fishers are completely compliant with all regulations regarding interactions with protected, threatened, and endangered species. In addition research has shown that the purse seining has a very low impact on the environment and on non-target and endangered species.<br><br>In May 2011 the NOAA Fisheries Southeast Fisheries Science Center began placing scientists on the Gulf of Mexico’s menhaden fishing vessels to collect catch data and record bycatch of sea turtles and marine mammals that could interact with the fishery. The data from this program does not yet appear | R2, R3, R5 | HIGH   |
| MEDIUM              |   |   |            |        |
| HIGH                |   |   |            |        |

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|  | to be available. |  |  |
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**e. Implementation**

| LEVEL OF COMPLIANCE | e.i There should be a framework for sanctions of violation of Laws and regulations.   | References | Rating |
|---------------------|---|------------|--------|
| LOW                 | <p><b>Determination: <i>The initial assessment found a robust framework for fishery enforcement at both State and National levels, and the 2011 surveillance report listed some minor changes to the sanctions and appeal process. There have been no significant changes since that time.</i></b></p> <p>The United States coast guard is responsible for enforcing fisheries management regulations within the EEZ.</p> <p>The five lead state agencies are:</p> <ul style="list-style-type: none"> <li>• Florida Fish and Wildlife Conservation Commission;</li> <li>• Alabama Department of Conservation and Natural Resource;</li> <li>• Mississippi Department of Marine Resources;</li> <li>• Louisiana Department of Wildlife and Fisheries;</li> <li>• Texas Parks and Wildlife Department.</li> </ul> <p>All of the above enforce the regulations within their own state territorial waters.</p> <p>For more information on the sanctions framework, please see the original fishery assessment and the</p> | R2, R3     | HIGH   |
| MEDIUM              |   |            |        |
| HIGH                |   |            |        |

|                     |  |   |            |        |
|---------------------|--|---|------------|--------|
|                     |  | 2011 surveillance assessment.   |            |        |
| LEVEL OF COMPLIANCE |  | e.ii A management system for fisheries control and enforcement should be established.   | References | Rating |
| LOW                 |  | <p><b>Determination: Each State enforces fisheries policy in its own territorial waters, and the US coast guard enforces policy in the EEZ. The initial on-site assessment confirmed enforcement in Louisiana waters and there have been no significant changes since then.</b></p> <p>All fishing vessels are registered with the US Coast Guard, are licensed and permitted by states whose authority and empowerment is derived from the Fishery Commissions by act of US Congress.</p> <p>The enforcement division of the Louisiana Department of Wildlife and Fisheries periodically checks fishing vessels on the fishing grounds in respect of issues such as fishing in closed areas, possession of restricted species, and ensuring by-catch is not more than 5% by weight. Non-compliance is dealt with by the issuance of a citation and the imposition of a fine.</p> | R2, R3     | HIGH   |
| MEDIUM              |  |   |            |        |
| HIGH                |  |   |            |        |

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## References

R1 – Gulf States Marine Fisheries Commission Gulf Menhaden management plan:

<http://menhaden.gsmfc.org/pdf/Menhaden%20FMP.pdf>

R2 – Gulf Menhaden initial IFFO RS assessment, 2010:

<http://www.iffonet.net/downloads/IFFO%20RS/Whole%20Fish/USA%20-%20Menhaden.pdf>

R3 – Gulf Menhaden 2011 surveillance assessment:

<http://www.iffonet.net/downloads/IFFO%20RS/Whole%20Fish/Menhaden%20surveillance%20report%202011.pdf>

R4 – Menhaden – forecast for 2012 and review of 2011 fishing seasons:

[http://www.st.nmfs.noaa.gov/st1/market\\_news/menhaden\\_forecast\\_2012.pdf](http://www.st.nmfs.noaa.gov/st1/market_news/menhaden_forecast_2012.pdf)

R5 – SEDAR Gulf of Mexico Menhaden stock assessment December 2011:

[http://www.sefsc.noaa.gov/sedar/download/S27\\_SAR\\_FINAL.pdf?id=DOCUMENT](http://www.sefsc.noaa.gov/sedar/download/S27_SAR_FINAL.pdf?id=DOCUMENT)

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