**Overview**

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| **Fishery name:** Western Seas & Channel Monkfish / Anglerfish (*Lophius piscatorius* & *L.* *budegassa*) | **Start date:** 25 March 2019 |
| **Fishery location:**Western Seas and Channel (VII b-k, VIII a/b/d) | **Fishing methods:**Gillnets (trammel & entangling/gill nets)Demersal trawl Beam trawl | **Annual reviews:**End Year 1: April 2018 Completed 30 April 2022End Year 2: April 2019 End Year 3: April 2020 End Year 4: April 2021 End Year 5: April 2022  |
| **Project leaders:** Project UK Fisheries Improvements – Stage 1 | **Improvements recommended by:**  |
| **Overview of the Action Plan:**Two species of monkfish (also called anglerfish), *Lophius piscatorius* and *L. budegassa*, are caught in an important set of fisheries in the western Channel and Western Approaches. It should be noted that the gillnet UoA is composed of (i) trammel nets (>220 mm mesh size) GTR and (ii) a combination of set gillnets (anchored) GNS, gillnets and entangling nets (not specified) GEN and gillnets (not specified) GN, all >220 mm. Although separate stocks, these are managed together through a shared TAC. ICES’ advice is provided for both species separately but only *L. piscatorius* has reference points and uses a precautionary, MSY approach. ICES consider this to be a Category 3 stock where management is essentially based on recent trends, rather than well-defined harvest rules. Under P1, this Action Plan therefore seeks to address this through better single species management, a reduction in unwanted target catch through the development of alternative management measures and the introduction of probabilistic analysis of stock assessment e.g. include confidence limits.In P2, a major part of the plan is developed to improve the major weakness of the fisheries identified by the pre-assessment, the management of secondary species caught in these fisheries. This will cover other fish as well as out of scope species such as seabirds and marine mammals, esp. for the gillnet fisheries, as well as ETPs. The Action Plan also looks at reducing the impact of these fisheries – specifically the demersal and beam trawl segments – on habitats, especially VMEs. The plan also calls for a Scale Intensity Consequence Analysis (SICA) analysis of the impact of beam trawling on the ecosystem.Under P3, the plan seeks the development of a fisheries -specific management plan that includes explicit short and long-term objectives. This should formalise the existing harvest strategy and harvest control rules for both species of anglerfish. It also calls for external evaluation of the management of these anglerfish fisheries, possibly though a final pre-assessment before the FIP is concluded and the fisheries might be considering entering into full MSC assessment process.  |
| Colour code in tables below: | Principle 1 | Principle 2 | Principle 3 |  |

**Summary Report (End Year 3)**

**Introduction**

This report marks the end of year three as part of a five year Fisheries Improvement Project (FIP) for the UK Western Seas & Channel Monkfish / Anglerfish (*Lophius piscatorius* and *L. budegassa*) fishery, (see page above). The report provides a review of the progress made during year three and what further actions need to be taken over the fourth year. This report has been prepared by Tim Huntington of Poseidon.

**Main Findings**

The fishery has made some progress over the year, although both P1 actions are now behind target. The delay in completing Action 1 (1.1.1) for *L. budegassa* is mainly over the possibility that ICES will recategorize it as a Data Category 1 species and introduce further, biomass-based reference points. If not, *L. budegassa* may need to undergo the RBF in any full assessment.

The remaining tasks are mainly related to developing a comprehensive Fisheries Management Plan (FMP) and using this as a tool for preparing the fishery for full assessment once the FIP has been completed.

**Recommendations for actions and activities over Year 4**

The current status of the FIP and the review results are shown in **Table 1** below. Based on these, the focus of actions to be undertaken over the next year are summarised below:

1. CEFAS to work with Dr. Paul Medley to resolve the needs of the stock assessment and harvest control rules, especially for *L. budegassa* in Action 1 and 3 respectively and incorporate in the FMP.
2. Further engagement with industry over the need for self-sampling and separate reporting of the two angler species in catch accounting.
3. Finalisation of management actions to reduce juvenile monkfish, skates and rays (esp. ETP species) via Actions 2, 5 and 7 and their incorporation into the FMP.
4. Review of spatial measures to reduce impacts on vulnerable habitats and species, especially in gravel areas (Action 8). In particular, we need to examine whether conservation feature management measures provide a partial strategy for otter / beam trawlers working on MCZs. The implications of Priority Marine Features being considered in English waters also needs to be examined.
5. Continued development of a Fisheries Management Plan for this fishery.

**Table 1: Action Plan**

| **Standard requirement** | **Lead & partners** | **Timescale / milestones** | **Progress / outcome** | **Revised milestone** |
| --- | --- | --- | --- | --- |
| **Action 1: Stock status (1.1.1) & Assessment of stocks (1.2.4)****Overview**Review new ICES analytical approach to ensure it is sufficient and appropriate for both species of monkfish. Development of probabilistic analysis of stock assessment e.g. include confidence limits.**Performance indicators**1.1.1 Stock status: **60-79**1.2.4 Assessment of stock status: **60-79**Requirement at SG80:It is highly likely that the stock is above the PRI and is at or fluctuating around a level consistent with MSY.The assessment takes uncertainty into account. | Action lead: Lisa Readdy as representative of CEFAS and the ICES Working GroupPartners: NWWAC & SWWAC membersResources: Engagement with ICES AC and WGs over stock assessment methodologies | **1a. Yr 2:** Review of ICES analytical approach for *Lophius* spp. to determine appropriateness and its ability to take into account uncertainty. | **On target (Y1 60-79, actual 60-79)** There have been various inputs over 2018 / 2019, inc. a joint call (LR, TH, JP & external specialists) on 18 January 2019. Fishing mortality estimates are available up to 2014, with most data from French, Irish and Spanish sources. In addition, there are eight years of Fisheries Science Partnership (FSP) data. A future FSP route may not be possible, so now looking at an alternative observer programme approach. *L. piscatorius* has been a Category 1 stock since 2018 *and L. budegassa* Cat 3. In 2019 there no changes in category after adding 1 year of data. Is a length-based assessment converting length to age using cohort analysis*. L. budegassa* uncertainty not fully taken into account – no proxy reference point for biomass for fishing mortality and biomass. Also very flat trends which don’t readily fit models. It is difficult stock to apply ICES models- no contract in the data. There is a need to confirm biological analyses to move to a length-based analysis. *L. budegassa* is the only issue, with FR survey not fully completed, so needed to be extrapolated. Some ES & FR biological research on biology and genetics, which will assist benchmarking, and assist stock assessment methodology. Probably in three years’ time. Uncertainty is mainly around the sampling schemes / levels and specifically for *L. budegassa* related to the survey index. For *budegassa*, there is a need to find proxy reference points that take uncertainty into account. This is already achieved *for L. piscatorius*, asuncertainty is known and taken into account in reference points (so no further action required for this species).  |  |
| **1b.** Yr 3: Evidence of a move towards a probabilistic stock assessment with confidence limits and that uncertainty is taken into account. | **Behind target (target ≥ 80, actual 60-79)** Action now limited to *L. budegassa*. WG Monk have new reference points for *L. budegassa* (ICES, 2018), but still a FMSY proxy but working on biomass reference points methodology (for all Cat 3 stocks). See Lisa briefing (by email). Still Cat III, and precautionary. There is an ICES WG meeting in May 2020 to consider developing a Category 1 assessment for *L. budegassa*. If sufficient progress has been made by the WG then benchmarks will be developed but it is expected that the June advice for *L. budegassa* would still be based on a Cat. 3 assessment. The WG is looking into reference points for mortality.The group discussed the levels of uncertainty in the analysis: Cat.1 takes into account uncertainty in its assessment but Cat.3 uses two independent fishery surveys to give a survey-based trend. LR informed the group that survey-based trend assessments tend to be quite noisy but if *L. budegassa* were to become Cat.1 the levels of uncertainty in data would dramatically reduce. No landings data included, apart from quantitatively and from rather disparate sources. No timescale. Best if Paul works with Lisa to prepare FMP sections through consultation with Lisa. Documentation: ICES (2018). Report of the Working Group for the Bay of Biscay and the Iberian WatersEcoregion (WGBIE), 3–10 May 2018 , ICES HQ, Copenhagen, Denmark. ICES CM 2018/ACOM:12. 642ICES (2019). Black-bellied anglerfish (*Lophius budegassa*) in Subarea 7 and divisions 8.a–b and 8.d (Celtic Seas, Bay of Biscay). June 2019Actions:* Secretariat to ascertain whether extra funding can be found to commission PM for the action plan in relation to P1
* TH to email PM any necessary material, including the latest advice, and copy LR.
 | Review over Year 4. |
| **Action 2: Harvest strategy (1.2.1)****Overview**Review of alternative measures to minimise the mortality of any catch of anglerfish species, resulting in a formal assessment for consideration by MAs. **Performance indicator**1.2.1 Harvest strategy: **≥80**Requirement at SG80:The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1 SG80. The harvest strategy is achieving its objectives (although may not be fully tested). There is a regular review of alternative measures of minimising mortality of unwanted catch. | Action leads: Seafish – Gus Caslake & Paul Trebilcock (Jim Portus & Andy Pillar)Partners: CEFAS, Industry, NWWAC & SWWAC members Resources: Engagement with main fisheries & MAs. | **2a**. Yr 0.5 (6 months) Development of review ToR and launch of review. | **Complete (Y1 60-79, actual 60-79)** The review was undertaken by Gus Caslake (Seafish) and Paul Trebilcock (CFPO). A report dated 2 March 2018 was made available to assessor. Mark Bell to look at evidence of juvenile monk from fully documented fisheries. Is there some evidence on sizes from landing notes. Possible avenue for an MSc student. Gill nets – needs to be include in Gus’ paper. Needs to include seal depredation.  |  |
| **2b.** Yr 1: Review compiled and results utilised in management options advice.  | **Complete (Y1 60-79, actual 60-79)** The draft paper (Caslake & Trebilcock, March 2018) included a useful review of the effectiveness of different technical measures to reduce juvenile monkfish bycatch for a variety of gears relevant to these UoAs. It mentioned possible management approaches, inc. effort restrictions, but fell short of recommending and specific approaches which could be taken by the FIP to reduce the catch of unwanted (e.g. under-size) monkfish.  |  |
| **2c.** Yr 2: Evidence that review results have been considered and utilised in management advice where appropriate. | **On target (target ≥ 80, actual ≥ 80)** The response to this action is based around the Caslake & Trebilcock report and its recommendations. In March 2019 the report was updated with a matrix of relative change and recommendations. It was noted by the SG that UoA gear already much larger than regulation minima (a point that needs noting in the FMP). There was some discussion on different management approaches, and it was noted that there has been a lot of work already been done on monkfish gear selectivity (both trawls and gillnets), and not much more can be done without seriously sacrificing the gear’s performance (see matrix in alternative measures report). This could probably be demonstrated by the historical increase in monkfish tail sizes (note there is no MLS). The main driver for selectivity is probably the sole. It is noted that the Landing Obligation means all monkfish and other quota species will be landed and therefore not considered unwanted catch. Andy Pillar in a review noted that this is a mixed trawl fishery for sole / mixed demersals and that increased mesh size is not possible. Looking at survivability, which is probably high, as mostly on conveyers with water pumps, many fitted retrospectively via EMFF. Otherwise tow times are already short (1.5 – 2.5 hour tows). It is noted that there already is a Good Practice Guide (2016) for the Channel & West Sustainable Trawling Group (all 3 POs) and good practice Guidelines drafted. Gus to circulate and see if it is worth re-introducing. Will run past Andy Pillar.In summary, the review concluded that no alternative measures are available at this time, and this should be reviewed in due course when new options maybe come available. The timing of this should be reflected in the FMP. The final recommendations have been reviewed by Paul Trebilcock of the CFPO and the reduced trawl times recommendations found to be acceptable. All needs to be embedded in the FMP. Maybe industry to employ consultant?Actions:* GC to follow up with Paul Trebilcock for sign off sentence on Harvest Strategy before next Steering Group meeting.
* Secretariat to identify areas of the FMP for specific individual input with help from TH
* LR to assimilate more recent survivability work for monkfish and circulate
* Secretariat to meet JP, AP and PT to progress industry input in the FMP
 | To be added to FMP by June 2020. |
| **Action 3: Harvest control rules and tools****Overview**Improve the understanding of the stocks of *Lophius piscatorius* and *L. budegassa*, with commercial catch sampling of separate species, aiming to improve estimates of species mortality and SSB for stock assessments to improve understanding on a risk basis and, if necessary, refine management. **Performance indicators**1.2.2 Harvest control rules and tools: **60-79**Requirement at SG80:Well-defined HCRs are in place that ensure exploitation rate is reduced as PRI is approached and stock is expected to be consistent or above MSY.HCRs are likely to be robust to the main uncertainties.Available evidence indicates that tools in use are effective in achieving exploitation rates required under HCR. | Action leads: CEFAS Partners: MMO, Defra & Industry, SeafishResources: Engagement with ICES, MAs and the NWWAC | **3a.** Yr 1. 1st three months: Review experience of the South Africa trawl fishery of hake (*Merluccius paradoxus* and *M.* *capensis*) for lessons learned on managing a two-species complex. Consider whether the RBF approach for *L. budegassa* is appropriate. | **Complete (target 60-79, actual 60-79)** A review was been made of a number of different fisheries (RSA hake, Canada 3LN redfish, various salmon fisheries) with similar issues over Inseparable / Practically Inseparable (IPI) Fisheries. This suggested that, so long as there is a precautionary harvest policy, catch and abundance monitoring, biennial stock assessments, harvest control rules, and management actions for both species in the fishery, it should achieve SG 80 for 1.2.1. However, it is noted that the review focussed mainly on harvest strategy (PI 1.2.1) rather than PI 1.2.2 (HCRs, this action).  |  |
| **3b.** Yr 1: Engagement with MA & ICES. | **Complete (target 60-79, actual 60-79)** Still looking at this via observer programme to progress forward analysis. FSP trip was undertaken but did not include species identification. Working with CEFAS to feedback whether FIP can assist. FSP funding submissions in January 2019. |  |
| **3c.** Yr 2: Proposals for species-specific catch accounting from industry on how they want to do that. Develop proposal & funding to collecting this data. E.g. adding species specific information to logbooks.  | **On target (target 60-79, actual 60-79)** *L. budegassa* is difficult to separate as catch reporting is mixed. There are two methods of catch sampling: 1) on-board science observers (understand wanted and unwanted catch) and (2) port sampling (measure length and ID species, if membrane is still left on. Observer and port data then raised to total landings. Catch sampling based on species combined, therefore could miss length info- gaps in data. France, Spain and Portugal also contribute to data but using different system- land separately. No evidence has been presented demonstrating engagement with the MA. Whilst still on target, progress is slow. |  |
| **3d.** Yr 3: Take our position to the MMO whether self-sampling is possible / acceptable. | **On target (target 60-79, actual 60-79)** FSP Project to see if self-sampling could be achieved. Rob Forster CEFAS lead (CEFAS has held 2 workshops with industry), Andy Pillar also engaged. Catches landed, sold and graded separately. Early results indicated that inspected landings were 90% accurate but as the trial was only five trips, the data collected was not sufficient to draw strong conclusions. Benefits to the industry not that obvious and unlikely that this would be taken up voluntarily. It was concluded that in terms of best practice, **it will be worth continuing the work but will need to give skippers time and support to adjust to new e-logs and grading machines before the process of separating the species becomes the norm**. However need to make fishers aware that this would be important to support potential MSC certification. Actions:* RF to follow up with the group over timelines for the monkfish report
* Group to decide over next steps once RF’s monkfish report is available
* TH to look at RF’s report and consider next steps, and to look at whether setting best practice would be useful for the FIP in incentivising work
 |  |
| **3e.** Yr 4: Implementation of HCR. | **On target** This action is not being addressed until Year 4 |  |
| **3f.** Yr 5: Provide evidence that indicates the tools in use are appropriate and effective in achieving exploitation rates required by the HCR e.g. evidence that exploitation rate has been reduced if required. | **On target** This action is not being addressed until Year 5. |  |
| **Action 4: Secondary species: Outcome status** **Overview**A MSC risk-based framework assessment should be undertaken using the Productivity-Susceptibility Analysis (PSA) tool for all main secondary species.Trammel net/tangle net only: analysis of the outcome of ‘out of scope’ species impacted by gillnets, e.g. seabirds, marine mammals and reptiles. **Performance indicators**2.2.1: **≥80**Requirement at SG80:Main secondary species are highly likely to be above biologically based limit OR If below biologically based limits, there is either evidence of recovery or a demonstrably effective partial strategy in place such that the UoA does not hinder recovery and rebuilding. | Action leads: Steering group to employ consultant, subject to fundingMSC to investigate funding Partners: IndustryStakeholders: RSPBResources: Expertise to categorise main and minor secondary catch. And to conduct a detailed PSA on these species.Expertise to assess impact on ‘out of scope’ species in gillnet fisheries | **4a.** Yr. 1: Scoping of (i) PSA and (ii) out of scope analyses.  | **On target (target <60, actual <60)** PSA undertaken by CEFAS but not completed until June 2018 and presented at June meeting. Note that this is linked to Actions 5 and 6. It was also noted that there is no action lead at the moment. The out of scope analysis is for GTN only.  |  |
| **4b.** Yr. 2: Implementation of (i) PSA and (ii) out of scope analyses.  | **On target (target ≥ 80, actual ≥ 80)** The Productivity-Susceptibility Analysis (PSA) analysis was complete last year, so this work just needs summarising and adding to the Fisheries Management Plan (FMP) to complete Actions 4 & 5.Action: • Secretariat to identify someone to summarise PSA analysis and put into FMP. |  |
| **Action 5: Secondary species: Management strategy****Overview**Following Action #4 above, a review of alternative management measures for both in scope and out of scope main species.  **Performance indicators**2.2.2: **60-79**Requirement at SG80:Management strategy in place, evaluated and implemented. Review of alternative measures.  | Action leads: Steering group to employ consultant, subject to fundingMSC to investigate funding Partners: IndustryStakeholders: Seafish, NWWAC & SWWAC membersResources: Expertise to undertake the review and identify potential mitigation measures | **5a.** Yr. 3: Based on PSA, conduct review of alternative management measures.  | **On target (target 60-79, actual 60-79)** Need to focus on alternative measures to reduce skates and ray mortality. Note that some skates and rays have TACs (and could therefore be considered as primary species in a full assessment). See Seafish Bristol channel work on survivability of discarded skates and rays. They have high survivability so will be discarded (under the Survivability exemption). There is a link with Action 7 (some are ETPs). Need to involve Shark Trust. In summary, need to examine whether there are any practical alternative management measures to reduced ray /skate catch levels. This is probably not necessary, given (i) their shape and (ii) their high survivability post-discard anyway. A shorter tow time may be the only viable option (see Action 2). Action: * To reflect that no alternative measures are practical, except for shorter tow times (see Action 7 for 2.3.2 ETP management below).
 | Need to consider how this is reflected in the FMP.  |
| **5b.** Yr. 4: Mainstreaming of alternative measures into management, if necessary.  | **On target** This action is not being addressed until Year 4 |  |
| **Action 6: Secondary species: Information****Overview**Following Action #4 above, a review and where necessary, improvements to, information needs will be conducted. For both in and out of scope species. **Performance indicators**2.2.3: **60-79**Requirement at SG80:Information adequacy for assessment of impact on main and minor secondary species, and for a management strategy. | Action leads: MMO. With CEFAS.Partners: IndustryStakeholders: Seafish, NWWAC & SWWAC membersResources: Expertise to undertake the review and identify potential information sources / requirements. | **6a.** Yr. 3: Based on PSA, conduct review current information sources on in and out of scope secondary species. | **On target (target 60-79, actual 60-79)** This action is being addressed in Year 3. See Ribeiro Santos (2018) “*There is a need to develop directed studies to monitoring ETP bycatch and rare species and a need to develop statistically sound sampling programmes with the objective of monitor catches of those species e.g. skate & rays*”. Most TAC species must be landed (some exceptions). Non-TAC species can be discarded, esp. if high survivability. All discards from non-TAC spp. have to be recorded. Discards not recorded in many cases but is required. Skates and rays can be discarded, but if >50 kg per trip, need to record by species and volume (doesn’t count against quota). Otherwise landed, retained and recorded (if TAC species). Not observed, so less reliable (Is under the DCF, so 1% observer coverage). ND recommended the group look at the Discard Atlas compiled by Advisory Councils (ACs) e.g. the North-Western Waters AC (NWWAC) discard atlas, with Tom Catchpole as the lead on the work. Speak to the Future Fisheries Team on camera observation (Julian Roberts, lead). Need to demonstrate (i) we can quantify them and (ii) show survival levels. Essentially need to do complete catch composition analysis and allocation of species to 2.1, 2.2 & 2.3. Other sources include Project Neptune. Maybe skewed to cuttlefish which has evolved since the FIP was started. In summary, **there is a need to again review the catch composition of this fishery** (primary, secondary & ETP), with a particular focus on skates and rays. Also assess survivability to show net fishing mortality.Documentation:* Ribeiro Santos, A. (2018). Project UK Fisheries Improvement. Task 6. Secondary species status for monkfish fishery, beam trawl, demersal trawl and tangle/trammel net. Version 2.0 Dated 23/06/2018. 37 pp.

Actions: * Secretariat to liaise with CE in contacting Julian Roberts in getting information and MMO camera footage data
* Seafish and MSC to ascertain opportunities for intern to review MMO camera footage and other data, and collate existing survivability research for skates and rays
* Secretariat to identify someone to summarise MMO camera work into FMP
* Secretariat to share starry ray report with TH
* TH to speak with Sarah Fowler, an elasmobranch specialist, in relation to shark and ray designations for the IUCN Red List.
* Secretariat to identify who might review the current ETP list, including catch level data from the fishery, and identify mortality levels
* Secretariat to review the MMO/gov website on the landing obligation as it lays out the requirements clearly and review the Discard Atlas data available.
 |  |
| **6b.** Yr. 4: Where necessary, develop new information sources on in and out of scope secondary species.  | **On target** This action is not being addressed until Year 4. |  |
| **Action 7: ETP species****Overview**Information on the nature and scale of impacts on ETPs needs to be assessed. Based on this, appropriate management measures need to be developed. This needs to be embedded in an on-going, risk-based ETP impact monitoring system. **Performance indicators**2.3.1: **60-79**2.3.2: **60-79**2.3.3: **60-79**Requirement at SG80:2.3.1. Outcome status: Known direct effects of the UoA are highly likely to not hinder recovery of ETP species.2.3.2. Management: There is a strategy in place, with objective basis for confidence that it will work and regular review of potential effectiveness and practicality of alternative measures to minimise mortality2.3.3. Information: Some quantitative information is adequate to assess UoA related mortality of ETP species | Action leads: Paul Trebilcock & Ruth Hoban. MSC to explore who can carry out risk assessment with JNCC & MMOPartners: CEFAS, Industry, JNCC , MMO, Seafish Science Advisory Group (SAG)Stakeholders: Seafish, NWWAC & SWWAC members SMRUResources: Expertise to assess fisheries-related impacts on ETP populations, and to develop both alternative management measures to combat these and a long-term risk-monitoring program.  | **7a.** Yr. 1: GIS-based risk assessment. Listing of potential ETPs interacting with UoAs, and then mapping of ETP distribution overlap with UoA fishing effort.  | **On target (target 60-79, actual 60-79)** A GIS-based risk assessment was conducted (Page, 2018 ) and was presented to the February 2018 Steering Group meeting. It is a useful document, although requires further ‘ground-truthing’, as some of the results (e.g. Northern gannet catches in beam trawls) have been over-represented. The paper was critically reviewed by Simon Northridge of SMRU. It is noted that Project NEPTUNE (National Evaluation of Populations of Threatened and Uncertain Elasmobranch stocks) by CEFAS and the CFPO with Defra funding, conducted a ‘real-time’ reporting of elasmobranch bycatch using three gillnetters and three trawlers (all in UoA). See Ellis *et al* (2015 ), including PSAs. This has apparently resulted in a real-time spur dog reporting tool, and identification of hotspots and adaptive management, although the latter has not been confirmed. |  |
| **7b.** Yr. 2: Development of possible management approaches for reducing ETP interactions and impacts, if necessary). | **On target (target 60-79, actual 60-79)** Shark identification guide produced by Seafish (Gus). Lot of work (Stuart Heathington) between CEFAS and SW industry. New paper by Adam Townley.  |  |
| **7c.** Yr. 3: Implementation of pilot projects for ETP management approaches. | **On target (target 60-79, actual 60-79)** Nathan now lead - will review Adam’s paper and pass by industry. Recommendations in Adam’s paper to be reviewed by SG at the next meeting. No pilot projects identified. Documentation: * Townley, Adam (2019). Summary of ETP Species Interactions with the PUKFI Monkfish Fishery and Recommendations for Bycatch Mitigation. Unpublished.
* Page, C. (2018). Western & Channel Monkfish Fishery ETP Species Assessment. Report to Project UK Fisheries Improvements, January 2018.
* Ellis, J. R., Bendall, V. A., Hetherington, S. J., Silva, J. F. and McCully Phillips, S. R. (2015). National Evaluation of Populations of Threatened and Uncertain Elasmobranchs (NEPTUNE). Project Report (Cefas), x + 105 pp

Actions:* See Action 6 (above)
* TR to examine implications for possible introduction of Priority Marine Features into English waters on these fisheries (esp. the mobile UoAs).
 | Review in July 2020.  |
| **7d.** Yr. 4: Mainstreaming of ETP management approaches and introduce of the risk-monitoring system. | **On target** This action is not being addressed until Year 4 |  |
| **Action 8: Habitats****Overview**Bottom and beam trawl only. The spatial scale, intensity and impact on commonly encountered and in particular, VMEs, needs to be quantified. Based on this, appropriate management approaches need to be developed. This needs to be embedded in an on-going, risk-based ETP impact monitoring system.**Performance indicator**2.4.1: **60-79**2.4.2: **60-79**2.4.3: **60-79**Requirement at SG80:2.4.1. Outcome status: The UoA is highly unlikely to reduce structure and function of commonly encountered habitats to a point where there would be serious harm.2.4.2. Management: There is a partial strategy in place to achieve Habitat Outcome 80 level. There is some quantitative evidence that management is being implemented and UoA complies with VME related management.2.4.3. Information: There is reliable information on the spatial extent of interaction and timing and location of use of fishing gear. Adequate information continue to be collected to detect any increase in risk to main habitats. | Action leads: Steering group to employ consultant, subject to fundingLead to be decided for year 2Partners: CEFAS, Industry, JNCC, MMO, Defra, Seafish Science Advisory Group (SAG)Resources: Expertise to assess fishers-related impacts on habitats, and to develop both alternative management measures to combat these and a long-term risk-monitoring program.  | **8a.** Yr. 1: Identification of interactions with common and VME habitats, and consequences for associated communities. | **On target (target 60-79, actual 60-79)** Study by CEFAS (bottom and beam trawls only). CPUE broadly static. Number of vessels reduced slightly in 2016.  |  |
| **8b.** Yr 2: Development of possible management approaches for reducing habitat interactions and impacts. | **On target (target 60-79, actual 60-79)** First version of CEFAS study available. Gladys presentation (on behalf of Isadora). Used Relative Benthic Status as a main metric, mostly showing 70% recoverability within a year. But no <12 m data, but inshore areas have been intensively studied by IFCAs. Habitat mapping fairly coarse. Values are metanalyses, so not specific to area / gear. ICES working group on Fisheries Benthic Impact and Trade-offs (WGFBIT). Showed impacts mainly on gravel areas. However SG suggested that coarse sediments not really targeted (prefer sandy, soft sediments) and that most coarse sediments tend to be protected. Should be represented by MCZ network.  |  |
| **8c.** Yr 3: Implementation of pilot projects for habitat management approaches. | **On target (target 60-79, actual 60-79)** RBS index in CEFAS report says <80% recoverability, but only over a year, so likely to be >80% over 5 – 20 years. Also lots of data caveats, lack of spatial analysis (e.g. MCZs). Looking at a new GIS analysis of effort, habitats and MPAs (see actions below). Looking to be done by a MSc student. TR to write a ToR. Addressing 2.4.3 (b). Review by Isadora from CEFAS on what habitat types are considered as VMEsActions* TR to identify what is needed for the habitat work e.g. effort and MCZs overlaid on a GIS map and CE to share with the relevant team within MMO
* Secretariat to ask Isidora Katara how she defined gravel areas in her report
* Secretariat to work with TH on a draft terms of reference for further work on sediment types in MCZs, and check with Isidora Katara that they cover all necessary requirements.
* Examine whether MPAs / MCZs have sufficient management mechanisms to manage bottom trawl impacts e.g. via MMO byelaws. If not, these need to be urgently considered.
 | Review in July 2020.  |
| **8d.** Yr. 4: Mainstreaming of habitat management approaches and introduce of the risk-monitoring system. | **On target** This action is not being addressed until Year 4 |  |
| **Action 9: Ecosystem: Outcome status (2.5.1)****Overview**Beam trawl only. Based on Actions #7 and #8, conduct a Scale Intensity Consequence Analysis (SICA) analysis of beam trawling in the UoA.**Performance indicator**2.5.1: **60-79**Requirement at SG80:2.5.1. Outcome status: The UoA is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm. | Action leads: Steering group to employ consultant subject to fundingMSC to investigate funding Partners: CEFAS, Industry, JNCC, Seafish SAGResources: Expense in ecosystem analysis and use of the RBF and SICA tools.  | **9a.** Yr. 1: Constitute expert group and conduct SICA analysis of main ecosystems impacted by beam trawls  | **On target (target 60-79, actual 60-79)** SICA analysis (beam trawl only) presentation by Gladys Lambert (CEFAS).  |  |
| **9b.** Yr. 2: Based on the SICA results, identify and recommend further research and management actions that reduce ecosystem disruption to acceptable levels. | **On target (target 60-79, actual 60-79)** Main issue is lack of <12 m activity mapping. Already iVMS in D&S area, which will likely be expanded to all areas / vessels >8 m by 2021, inc. e-reporting. Currently paused but will be re-started. On target but need formal acceptance of response (extra iVMS coverage).Only a handful of beam trawlers are 8-12 m; mainly target sole & plaice. If iVMS roll-out is delayed, may exclude from UoC.  |  |
| **9c.** Yr. 3 - 4: Recommendations made and disseminated. | **On target (target 60-79, actual 60-79)** This action is delayed until Year 4. Awaiting roll-out of iVMS to all inshore fleet. Documents: * Lambert, G., R. Martinez & S. Mangi (2019). Information for Scale Intensity Consequence Analysis (SICA) of performance indicator (PI) 2.5.1. Task 5. Monkfish ecosystem assessment.

Actions* CE to find out any iVMS updates from the MMO and share with the group
* TH to amend the Action Plan for the iVMS work to be done in Year 4.
 | Delay until Year 4.  |
| **Action 10: Fishery-specific objectives (3.2.1) and Decision-making processes (3.2.2)****Overview**Development of a fisheries-specific management plan that includes explicit short and long-term objectives.This should formalise the existing harvest strategy and harvest control rules for both species of anglerfish. **Performance indicator**3.2.1 Fishery-specific objectives: **60-79** 3.2.2 Decision-making processes: **60-79**Requirement at SG80:Short and long term objectives, which are consistent with achieving the outcomes expressed by MSC’s Principles 1 and 2, are explicit within the fishery-specific management system.There are established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives | Action leads: Nathan de Rozarieux & fishing industry as represented by PT, JP & APPartners: NWWAC & SWWAC members, Defra, CEFAS, Industry Resources: Expertise in developing fisheries management plans / harvest strategies | **10a.** Yr 2: Scoping for inclusion of *Lophius* spp. in a formal fisheries management plan (or inc. in a mixed fisheries MP). Development of a Position Paper. | **On target (target 60-79, actual 60-79)** No action so far but agreed no position paper was required. Looking at a larger area and might not be possible for NWWAC areas. Group needs to flag monkfish with Defra. Since 2012 (CFP review) MSY, via ICES advice. TAC consistent with MSY. One year rolling plans as part of the multi-annual plan. |  |
| **10b.** Yr 2: Tasking the inclusion of *Lophius* spp. in a formal fisheries management plan (or inc. in a mixed fisheries MP). | **On target (target 60-79, actual 60-79)** Nathan De Rozarieux agreed to produce scoped FMP by next meeting e.g. with resources for completing sections. Matt will act as a facilitator…… |  |
| **10c.** Y3: Draft FMP with short and long-term objectives. | **On target (target 60-79, actual 60-79)** Will divvy up FMP amongst different groups. Still work in progress.Actions* Secretariat to divvy up FMP writing responsibilities amongst the Steering Group.
 |  |
| **10d.** Yr. 4-5: Final FMP with short and long-term objectives. | **On target** This action is not being addressed until Year 4 -5 |  |
| **Action 11: 3.2.4 Monitoring & Evaluation****Overview**External evaluation of the management of these anglerfish fisheries.**Performance indicator**3.2.4 Monitoring and management performance evaluation**60-79**Requirement at SG80:There are mechanisms in place to evaluate key parts of the fishery-specific management system, inc. the occasional external review | Action leads: Gus Caslake as representative of the Seafish SW panelPartners: CEFAS, IndustryStakeholders: Seafish, NWWAC & SWWAC membersResources: Expertise in the evaluation of fisheries management regimes | **11a.** Yr 3: ToR developed and contractor identified. | **On target (target 60-79, actual 60-79)** Find out when next ICES benchmarking is (count as an external review). Fishery Progress in Year 3? JP to find out.Actions* Secretariat to ask the MSC Science & Standards team what constitutes an 'independent review' of the FMP
* Secretariat and TH to check other Project UK FIP Action Plans to ascertain whether independent review needed
 |  |
| **11b.** Yr 4: External review report completed and recommendations made available to FIP | **On target** This action is not being addressed until Year 4 |  |
|  |  |  |  |  |
| **Other Actions**[Location to record non-PI related actions for the fishery] |  | **N/A** | **N/A** |  |
|  | Secretariat to confirm with the remaining Stage 1 FIPs if they are happy with the Terms of Reference circulated on 26 November 2019 and confirm the outcome with all Stage 1 FIPs in March 2020 |  |
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