**Terms of Reference to deliver report on:**

**What’s in the net? Using camera technology to monitor, and support mitigation of, wildlife bycatch in fisheries**

**Timeframe of contract.**  June 2019 – October 2019

**Background and context**

Some of the key elements of sustainable fisheries include:

1. the collection of robust data with which to set sustainable removal rates or harvest control rules in a fishery, and to allow assessment of the impact of the fishery on the wider marine environment
2. effective monitoring to provide accountability for what is being removed (both target and non-target species to assess wider environmental impact) and to support compliance and enforcement procedures.

Both of these objectives can be achieved by the use of effective monitoring at sea. However at present the vast majority of the world’s fisheries have little or no effective monitoring at sea. This is a problem for our oceans as it means we are largely unaware of the true impact that fishing is having on our marine environment either with respect to the target or non-target species or indeed habitats. Lack of monitoring leads to low accountability for what is being removed by fishing fleets and in turn high potential for illegal, unreported and unregulated (IUU) fisheries. Self-reporting by fisheries and market inspections, while useful in some cases, are known to facilitate bias and under-reporting, particularly of protected species bycatch, which can be discarded at sea.

While there is a wide spread commitment from the seafood market (retailers, processors and food services providers) to avoid or minimise the unintended catch of threatened or endangered species such as sea birds, marine mammals as well as unwanted fish species in their seafood chain, there is often a lack of evidence with which they can demonstrate that they are meeting such commitments.

WWF views Remote Electronic Monitoring with cameras and gear sensors (hereafter referred to as REM) as a technological development with the potential to greatly enhance the ability for fisheries and governments around the world to improve their data collection, monitoring, accountability and minimise the risk of IUU in both artisanal and industrial fisheries. We believe that the effective deployment of REM is a cost effective and robust means of monitoring at sea and yet despite the demonstrated usefulness of this technology uptake is slow. There are substantial and recognised barriers to its adoption which are well captured in the TNC/CEA report *Catalyzing the growth of Electronic Monitoring in Fisheries*[[1]](#footnote-1).

In addition to providing data on target fisheries REM can also be used to provide information on the capture of endangered, threatened and protected marine wildlife such as marine mammals, turtles, sharks and seabirds. This is a less well developed application of REM but where it has been used to characterise protected species interaction with commercial fisheries has been well captured in the JPEC report[[2]](#footnote-2).

**The contracted report – what it can deliver**

The lack of effective monitoring and information on what is happening at sea contributes to the ongoing lack of effective data with which to manage fish stocks. It also means that we have little idea of the true extent of the problem facing many of the ocean’s endangered, threatened or protected species such as dolphins, whales, turtles, sharks or seabirds. This lack of knowledge of the extent or indeed awareness of the existence of bycatch issues is one the greatest barriers to convincing governments or fisheries to address and mitigate the problem.

WWF are keen to see the adoption of REM in all its applications accelerated. To do this we believe that it will be helpful to have a report that identifies what best practice looks like (in different scenarios), outlines what the key steps are that are required to set in place an effective REM system and where at different levels – global, regional and national – advocacy efforts will be best directed. This will be informed by the aforementioned reviews, current application and identifying what best practice will look like in key areas.

WWF would like to commission a consulting firm or individual to deliver a report that includes the following elements:

1. **Overview**: Provides a brief overview of the application of REM globally, sourcing from reports such as the one by TNC mentioned above. This should include a brief outline of the basic principles of REM which can be sourced from the WWF report on REM[[3]](#footnote-3) and the key design considerations needed as outlined in the TNC report.
2. **A brief outline of where REM has been used to date to address ETP species** – drawing on the JPEC report.
3. **Identify case studies of best practice** with respect to the use of REM for monitoring of non-target/ETP bycatch around the world. This should include a minimum of 4 in-depth case studies (with at least one detailing REM use in industrial fleets, and one in artisanal fleets). This should include an outline of what best practice would look like and how it can deliver on key management and conservation objectives.
4. **Analysis of gaps and priorities**: Comments on some of the barriers to use of REM identified in the TNC report (cost, transparency of collected data, vessel size, owner of data, responsibility of data interpretation) and how these can be resolved, specifically with respect to use to monitor ETP bycatch;
5. **Identify key advocacy interventions** at global, regional and national level where WWF could effectively focus attention to influence conservation benefits. For example at global level is REM best addressed via FAO guidelines, inclusion in SDGs or other? At regional level which RFMOs might be most usefully targeted (if at all) and how would this work in practice
6. **Provide key set of recommendations** for delivering REM at national level, focussing on best practice and including options for large and small scale operations

The conservation outcomes that the report is intended to deliver on are:

1. Improved understanding and awareness of the scale of fisheries impact on our seas through improved monitoring at sea with specific focus on monitoring bycatch and supporting effective deployment of bycatch mitigation of non target species such as seabirds, turtles, cetaceans. This should ultimately,
2. Deliver a reduction of incidental capture of wildlife bycatch through the application of successful mitigation strategies

Sub-objectives

* Increase awareness amongst key target audiences of the practical application of REM to improve fisheries management by enhancing data collection, providing effective monitoring and compliance as well as deterrence of IUU and supporting wildlife bycatch mitigation
* Increased awareness of the current lack of accountability in our fisheries and the importance of addressing this for ocean health
* Highlighting the importance of improved data for fisheries management and the benefits that this affords
* Provide practitioners with information on the key elements required for successful application of REM in a way that is understandable yet authoritative among key audiences
* Help to guide and support WWF global fisheries advocacy
* Further consolidate views of key audience members of WWF as a visionary and leading contributor to marine conservation and protection efforts
* Inspire funders and partners that WWF has yet another meaningful and promising initiative underway that they should assist and/or be part of

The target audience for the report is broad, and should answer a global call to action for improved monitoring at sea and in particular the need to better understand and effectively mitigate wildlife bycatch. Audiences will include policy makers (government agencies, regulatory bodies); regional fisheries organisations, fisheries; and other stakeholders including, but not limited to research organisations, NGOs, and IGOs. As such, the report should use professional and where necessary technical language with appropriate numbered citations and references, while still being accessible to readers without a technical background.

The Report should be a minimum of 25 pages in length, and a maximum of 50 pages in length, 1.5 space, 12 point Aerial font, See the [Review of Methods Used to Reduce Risks of Cetacean Bycatch and Entanglements](https://www.cms.int/en/document/review-methods-used-reduce-risks-cetacean-bycatch-and-entanglements), a WWF commissioned report later published by CMS as an example of the length, tone and standard expected for this report.

**Method of work**

* Desk based reviews of published literature, as well as grey literature and reports available on-line or through stakeholders (see below)
* Engaging with relevant stakeholders to get their views. (REM suppliers, Enforcement Agencies, FAO, catching sector operators, market players).  WWF can help to provide key contacts for this.
* No field trials are necessary but would be useful to go to boats with REM or fishing fleet owners to discuss options and their views, particularly for the featured case studies, so some travel may be required.

**Deliverables:**

* Production of a report in pdf and word format for WWF to use for both internal and external communication, covering the above objectives with strong executive summary that includes conclusions and recommendations. The report will be used to guide WWF in policy development and recommendations for advocacy around the effective use of Electronic monitoring in the most strategic way for the purposes of maximising impact. It may also be used to generate public awareness for levels of monitoring and incidental capture and the need for effective management of global fisheries in order to be accountable and minimise bycatch.
* Good images (photographs, illustrations, graphs, maps etc.) to illustrate/accompany case studies where possible would be helpful as WWF may choose to design the report in WWF house style.

**Timeline:**

Tender Response Deadline: 3 June 2019

WWF Evaluation: 14 June

Contract signed and work commences: 21 June

First draft report delivered: Mid September

Final report due end of October 2019

**Candidate profile**

The consultancy firm or individual should demonstrate the following skills and competencies:

* Familiarity with global fisheries including larger industrial operations under national control as well as RFMO management and some understanding of artisanal fishing in developing countries;
* Familiarity and/or experience with monitoring of fisheries, particularly REM technologies as they are developing around the world;
* Understanding of the issues surrounding fisheries bycatch and discards, including protected species such as turtles, sharks, birds and cetaceans;
* Strong writing skills in English (please provide examples of past work with your application). An ability to read or assimilate Spanish or French language reports would be an additional bonus;
* Ability to work independently, network with necessary stakeholders, and meet targets and milestones.

**Target Audience:** Decision makers/fisheries supply chain operators/regulators

**Available budget:** in region of £15-20k (with potential for additional travel reimbursement if required to meet delivery).

To express interest in this opportunity, applications should be submitted to include the following elements:

* A letter (maximum 2 pages A4) expressing interest and demonstrating the relevant skills and experience.
* A short method statement (maximum 2 pages A4) detailing the approach and method that shall be used to deliver the Terms of Reference.
* A table indicating how the available budget would be allocated with respect to different milestones and tasks associated with the report.
* A up-to-date CV (or similar) for individual to be involved in delivery.
* A maximum of 3 examples of past work, demonstrating relevant skills.

Please send applications by email to Helen McLachlan (Programme Manager - Fisheries, Environmental Policy and Advocacy) hmclachlan@wwf.org.uk by 17:00 on 3 June 2019 .

**May 13th 2019**

1. <https://www.nature.org/content/dam/tnc/nature/en/documents/Catalyzing_Growth_of_Electronic_Monitoring_in_Fisheries_9-10-2018.pdf> [↑](#footnote-ref-1)
2. <https://www.researchgate.net/publication/326410438_Using_electronic_monitoring_imagery_to_characterise_protected_species_interactions_with_commercial_fisheries_A_primer_and_review> [↑](#footnote-ref-2)
3. <https://www.wwf.org.uk/sites/default/files/2017-10/Remote%20Electronic%20Monitoring%20in%20UK%20Fisheries%20Management_WWF.pdf> [↑](#footnote-ref-3)