



Fishing in MPAs

- the role of adaptive risk management

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- Managing fishing in MPAs carries with it differing components of uncertainty.
- In that context “ARM” is not a panacea to enabling degrees of fishing to take place in and around MPAs.
- It does however, have the potential to enable practical management, and avoid what may be disproportionate responses...
- **...Provided certain conditions are met.**
- Over time it should help reduce some of the associated uncertainties.

- What was the “*Article 6 Project*” is now “*Fishing in MPAs*”.
- “*Fishing in MPAs*” - an oxymoron for some, an anathema for others.
 - But project is about ensuring commercial fishing doesn’t prevent MPAs from meeting their conservation objectives.
- Today is about a *developing* approach to practically meet MPA CO’s in the light of **uncertainty / low confidence**.

Fishing in MPAs Project- *Natural England's* role



- NE - statutory nature conservation advisor to 12nm for English waters.
- With JNCC on sites that straddle 12nm, *and* on principles that can be applied more widely.
- *This* work represents one such collaboration, but just NE+JNCC.
- Note: NE not managers/ regulators but work very closely with 10 IFCAs, the EA and the MMO.
- NE provide conservation **advice** in terms of:
 - Conservation objectives;
 - Feature (+Sub) location / distribution;
 - Feature condition;
 - Advice on those activities with the potential to damage features.

What uncertainty ?



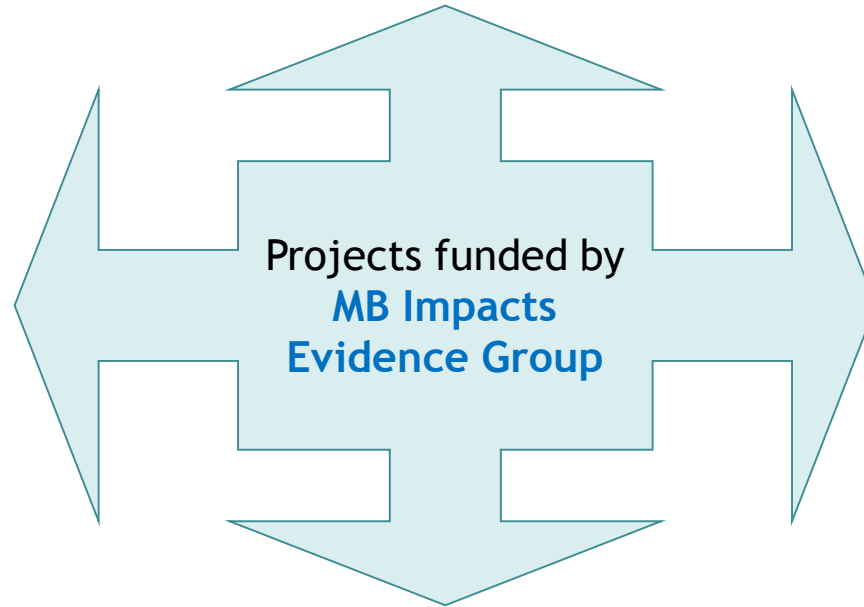
- In a lot of what *SNCBs* provide i.e.,
 - (i) Conservation objectives incl defining fav cond for dynamic sedimentary features (Feature Frameworks -> SATs...)
 - (ii) Sub / feature location / distribution (Evidence Project)
 - (iii) Sub/feature condition (what's baseline & is it appropriate? New NE methodology will incorporate risk component)
 - (iv) Gear Impacts. NE FIED; Gear Toolkit & ... ---> MBIEG

Potting Impacts:

Present a complete work programme that allows management decisions to be made relating to the impact of potting activity on designated features.

Validating WFD methods for MSFD:

Providing additional analysis for an ongoing project looking at the effects of fishing on the Infaunal Quality Index.



Benthic impacts and natural variability:

Analysing benthic survey data from mobile sediments to investigate the effects of towed fishing gear on benthic communities, against a background of natural variability.

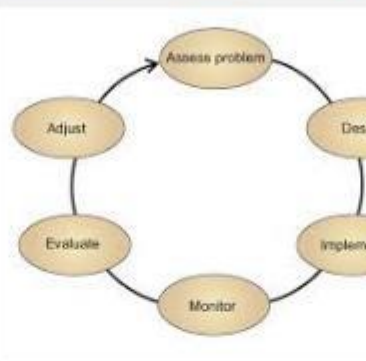
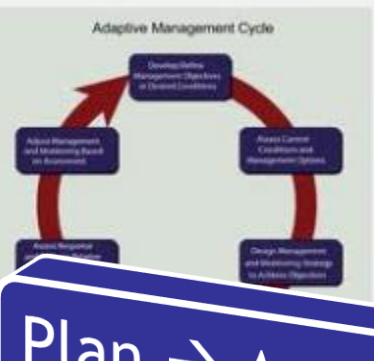
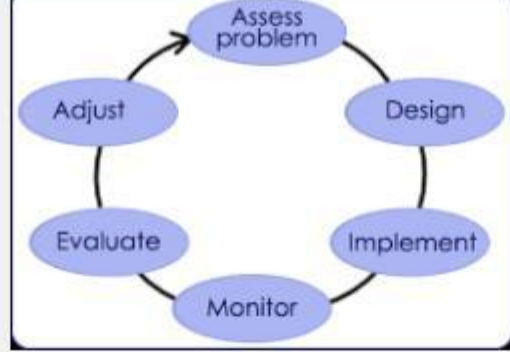
Activity footprint study:

Assessing the feasibility of applying a 'footprint' approach to quantifying fishing pressure.

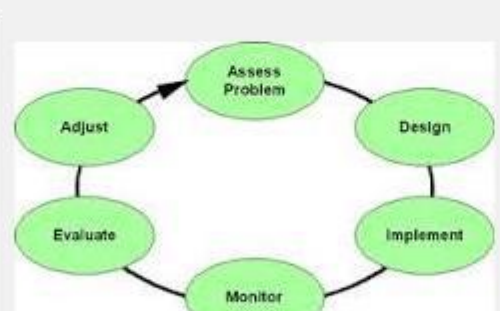
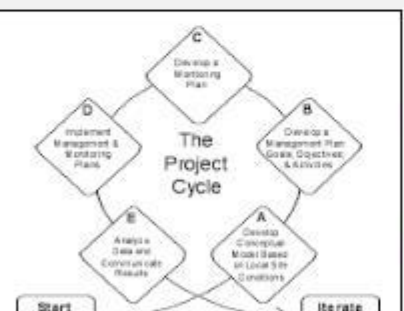
What is ARM? - *MPA fisheries mngt perspective*



- “Use a diagram, not words...” “



Plan → Act → Monitor → Evaluate → Adjust → Plan → etc.



What is ARM? *MPA fisheries mngt perspective*



- Plan → Act → Monitor → Evaluate → Adjust → Plan → etc.
- ARM *“an iterative and systematic approach for managing risk within the context of scientific uncertainty”* .
- Evidence from the monitoring of management outcomes is fed in to a structured process that reviews this information, and responds where appropriate, by adjusting the site management measures..
- ..and sometimes the Conservation Objectives themselves.

ARM (Adaptive Risk Management)



- The aim of ARM is to:
 - Manage risk to an acceptable level, remaining legally compliant without restricting ongoing activities disproportionately.
 - Establish an iterative, evidence-based process that will inform the development of conservation objectives, condition assessments & advice on management.
- HOW? Reduce human pressure in parts of the site and use subsequent monitoring to inform, and where necessary adapt, the conservation objective and management approach.
 - (a) reduce fishing pressure across entire feature; or
 - (b) modify gears across entire feature; or
 - (c) reduce footprint i.e., totally remove the potentially damaging activities from a portion of the feature.

- Probably most suited to sedimentary habitats as:
 - (i) associated communities have more resilient nature;
 - (ii) natural disturbance may be significant;
 - (iii) damage is not usually irreversible.

There may be increased risk of recovery taking longer - but mngt must adapt to show iterative **progress** towards favourable condition.

But in a context where uncertainty reigns, it may provide a way forward (eg scant evidence, CFP measures or ephemeral habitats).

ARM applied to ephemeral habitats



- Ephemeral *Sabellaria spinulosa* reefs in the Wash SAC
- Core Reef areas identified and protected from mobile demersal gear through E.IFCA byelaw.
- Protecting those areas with *optimal conditions* (small). Identified through core reef synthesis model based on 10yrs data.
- May be areas of periodic reef that occur outside the closed areas.
- Evidence on how the reef responds to protection, and the adjacent closed non-reef areas needs to be collected to inform feature mngt.
- New reef “discoveries” to be added to the CRS model. Closures may need to be extended.
- Monitoring needs to be able to assess reef development in the absence of trawling - this will inform our understanding and the CO.

ARM applied to ephemeral habitats (2)



- If fishing found to suppress reef development then need to extend the closures, and establish the protection to other ***NON***-core reef areas of the site.
- If monitoring shows fishing is having no discernable impacts then the closures can be removed.
- However... to have sufficient confidence in either conclusion, the monitoring would need to run for c.5+ years.
- If cable surveys etc show new high quality reef, mngt measures *at the site level* will need to be reviewed (+ update CSR)

Conditions for approving adaptive management



1. Initial management measures should be site specific and the process agreed with stakeholders before commencement. Ultimately it will be the regulator's judgement about how they want to balance the issue of *proportionate use of precaution* in their decisions.
2. Management measures must be appropriate with respect to the scale of risk posed to the feature's conservation objective, i.e. provide conditions for recovery and minimize the risk of adverse effects on site condition. Decisions about the nature, scale, timing, duration and location of the measures to be introduced should genuinely be believed to be capable of preventing deterioration or significant disturbance, where it is thought that these are occurring.

Conditions for approving adaptive management (2)



3. It would not be sufficient to apply management only in those areas that are currently unfished. This would not be expected to result in any recovery to impacted features and so would not:

- (i) prevent decline in the feature's condition; nor
- (ii) allow for suitable opportunities to study the effects of management and hence inform future management.

The measures should be proportionate not only in respect of the level of risk and the level of activities, but also in respect of the spatial distribution and the conservation status of the features.

Conditions for approving adaptive management (3)



4. Ability to monitor and detect change must be considered when proposing adaptive measures. The monitoring programme should be capable of delivering evidence of a sufficient scientific quality to underpin decisions on the setting of conservation objectives or advice on management measures - if it is not, or if funding is unavailable, a more precautionary management approach should be in place.

Who Pays?

NB It is very unlikely that *condition monitoring* undertaken by SNCBs will meet the monitoring requirements, either in terms of spatial & temporal coverage nor experimental design.

- The learning gained should inform management of other sites.
- The cost of the monitoring may exceed the financial benefit of non-closure.

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- In that context ARM is not a panacea to enabling degrees of fishing to take place in and around MPAs.
- It does however, have the potential to enable practical management, and avoid what may be disproportionate responses...
- **...Provided certain conditions are met.**
- Over time it should help reduce some of the uncertainties.
- It's early days - ARM approach will be discussed with IG in Feb.

- Thank you
- Questions?