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Dr X

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Dear Dr. X / Editor,

Enclosed is our manuscript “Spatial separation of catches in highly mixed fisheries”. Please accept it as a candidate for publication as a [Letter/Research Article] in *Nature*.

**Summary of appeal to a general scientific audience**

The way humans exploit heterogeneously distributed wild animal populations is a research topic of huge significance as it supports food security, sustainability and managing natural capital. Wild capture fisheries are spatially and technically complex as they simultaneously catch multiple populations which may have differing management or conservation goals. Understandings this multidimensional human-animal interaction is a challenge highlighted by [nature papers of significance…]. While advances in understanding of spatial dynamics and computing have allowed development of the increasingly sophisticated models to understand species distributions [cjfas review paper], it is necessary to distil this understanding to the key interactions of interest. In our manuscript we we present a novel method to reduce the complexity of spatiotemporal dynamics in wild capture fisheries to highlight how key spatial and species interactions drive catches in a highly mixed fishery. Further, we consider the issue in its policy context of supporting fisheries management in meeting multiple objectives, presenting the key interactions in a tractable and clear way for management action.

**Summary of appeal to a non-scientific audience**

In Europe, overexploitation of fish populations has resulted from ‘too many boats chasing too few fish’. Yet in recent years, capacity has reduced and stocks have begun to rebuilt. Now, the major challenge facing managers now is addressing the need to ensure all species caught in mixed fisheries are sustainable. This challenge has recently been tackled through a significant policy change in Europe under the Common Fisheries Policy (CFP) where fishers will in future have to count all catch against quota (the ‘landings obligation’). While attracting a high media profile (e.g. Hugh Fearnley-Whittingstall’s fish fight campaign, [www.fishfight.net](http://www.fishfight.net/)), this has had little attention in high level journals yet has the potential to fundamentally change how fisheries impact on fish populations. The challenge in managing all populations in a way that is sustainable yet allowing fisheries to continue to pursue quota for populations that allow higher catches have put a sharp focus on the complexities of spatial processes and dynamics. Spatial mitigation through changes in fishing patterns has been highlighted by industry as an important adaptation to the new fisheries management system. We set out an approach which Goes well beyond current practices and has potential to fundamentally alter the discourse on spatial avoidance as a tool to adapt to a challenging policy change, of great importance to European fisheries.

**Manuscript details**

Total words: \\

Abstract: 182 \\

Intro: 624 \\

Outline: 223 \\

Case study desc: 229 \\

Results 1: 636 \\

Results 2: 252 \\

Results 3: 568 \\

Discussion: 461 \\

Conclusions: 635 \\

Methods: 1430 \\

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TOTAL: 5240 \\

Total - abstract 5058 \\

Figures: 4 \\

References: 45 \\

**Suggested referees**