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*Supplement of*

## **Potential future fisheries yields in shelf waters: a model study of the effects of climate change and ocean acidification**

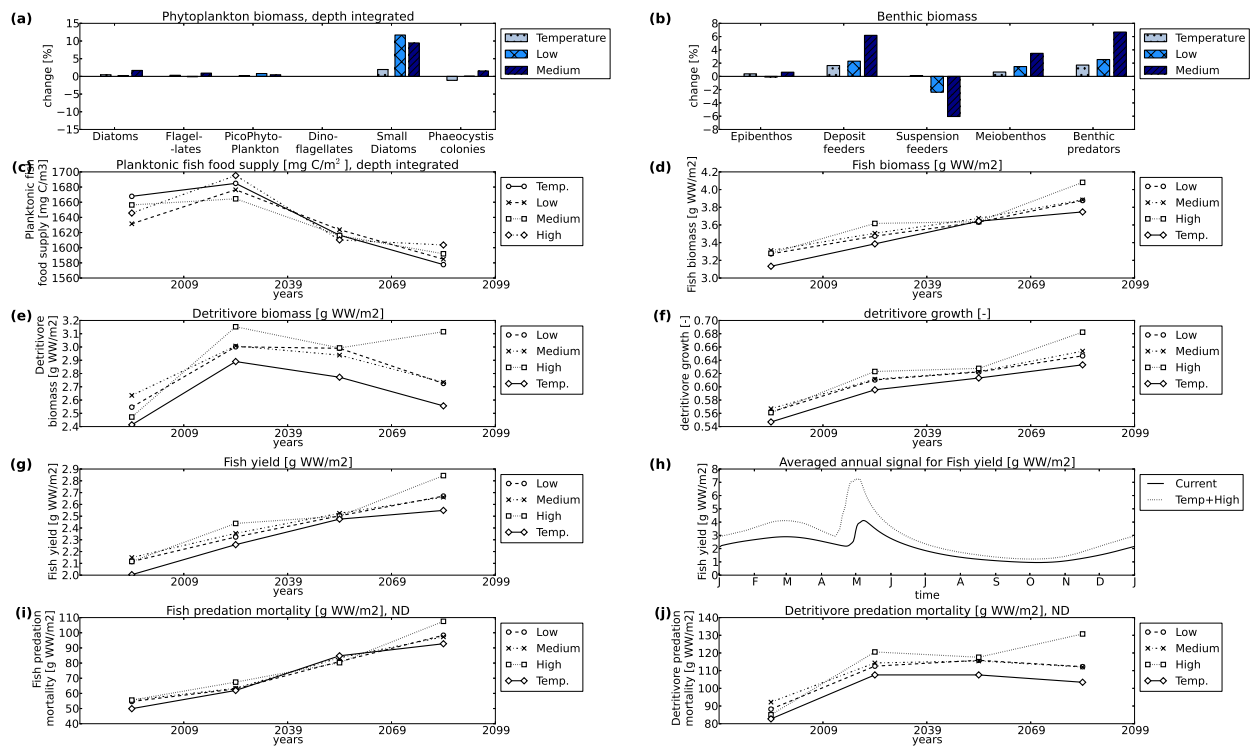
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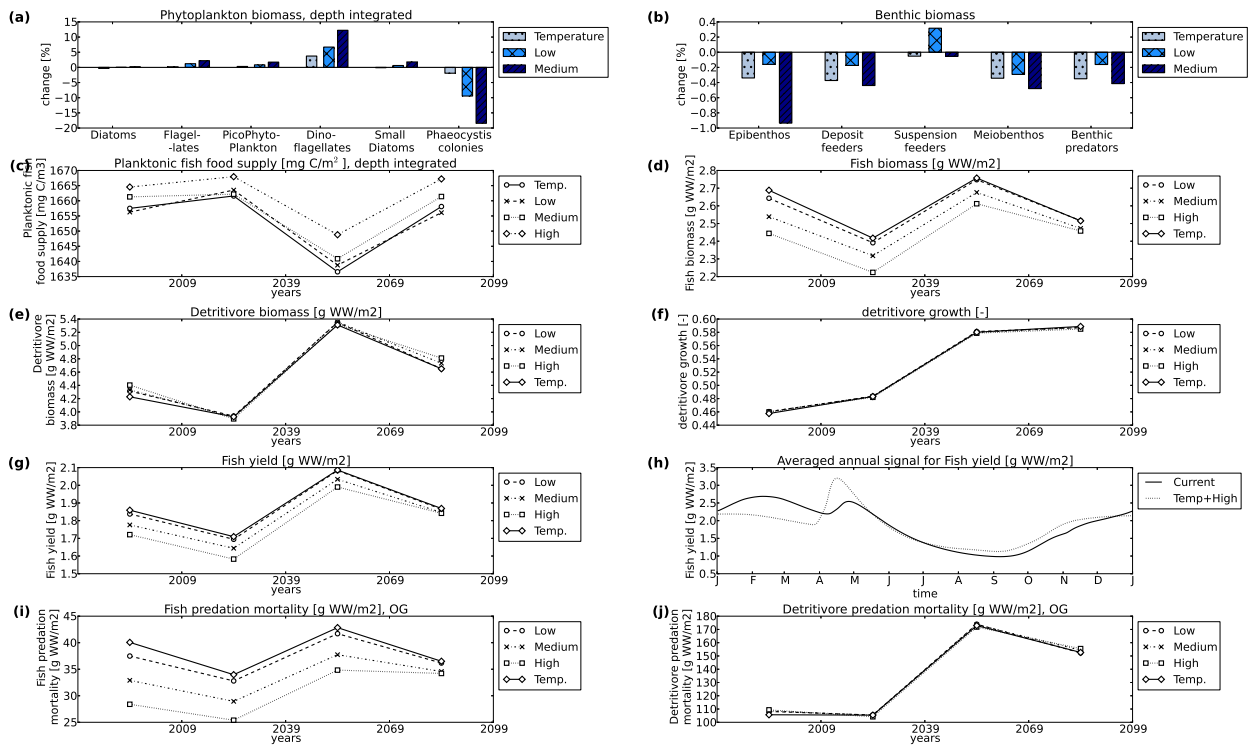
# Supplementary materials

## North Dogger



*Figure S1:* North Dogger: 30-year averaged values, climatic plus lower trophic level ocean acidification effects (CC + LTL OA): (a) phytoplankton changes [%] (only OA effects), (b) benthos changes [%] (only OA effects), both 2069-2098 change compared to 1979-2009, (c) plankton-based fish food, (d) fish or pelagic predator biomass, (e) detritivore biomass, (f) detritivore growth rates, (g) fish yield, (h) annual fish yield signal for the current time (1979-2008 climate scenario) and the high impact scenario (2069-2098 climatic plus LTL acidification effects) signal, (i) predated biomass for pelagic predators and (j) predated biomass for detritivores. Note that figures (a) and (b) do not include temperature effects: as they are the same as those in the main paper we present them without climate effects to highlight acidification effects.

## Oyster Grounds



**Figure S2:** 30-year averaged values, climatic plus lower trophic level ocean acidification effects (CC + LTL OA): (a) phytoplankton changes [%] (only OA effects), (b) benthos changes [%] (only OA effects), both 2069-2098 change compared to 1979-2009, (c) plankton-based fish food, (d) fish or pelagic predator biomass, (e) detritivore biomass, (f) detritivore growth rates, (g) fish yield, (h) annual fish yield signal for the current time (1979-2008 climate scenario) and the high impact scenario (2069-2098 climatic plus LTL acidification effects) signal, (i) predated biomass for pelagic predators and (j) predated biomass for detritivores. Note that figures (a) and (b) do not include temperature effects: as they are the same as those in the main paper we present them without climate effects to highlight acidification effects.

### Southern Bight (Sean Gas Field)

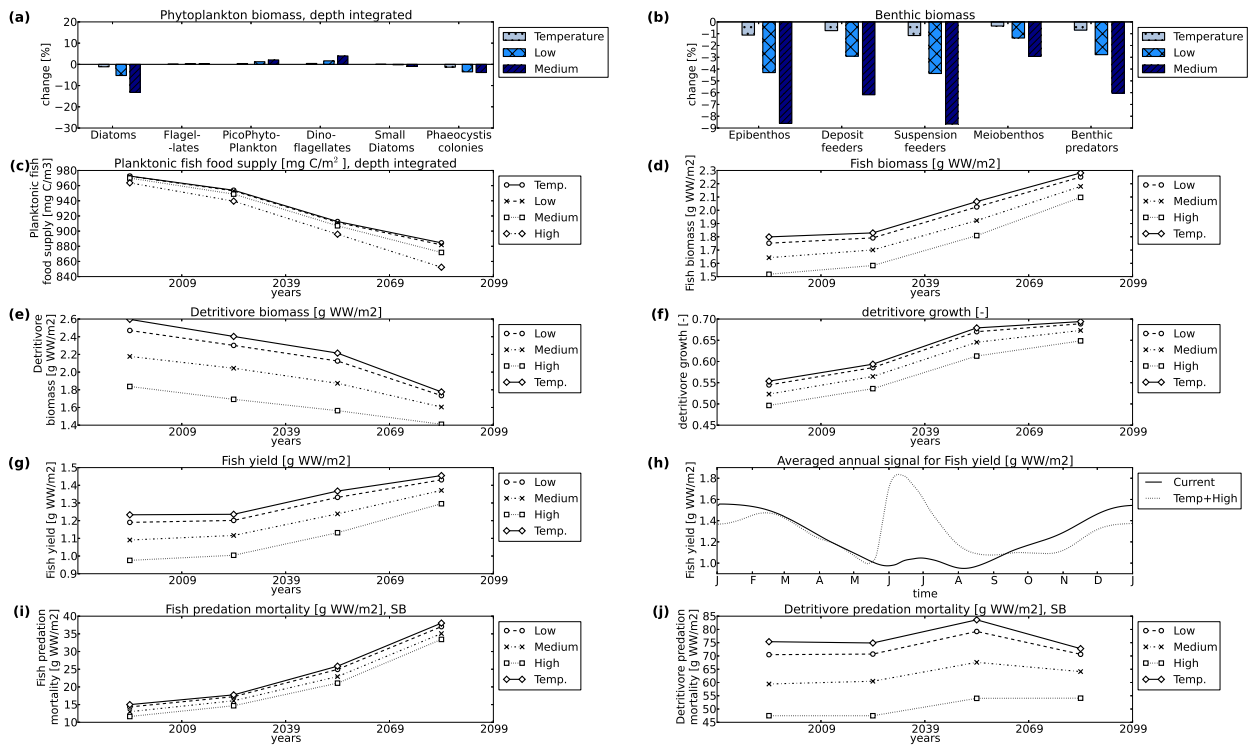
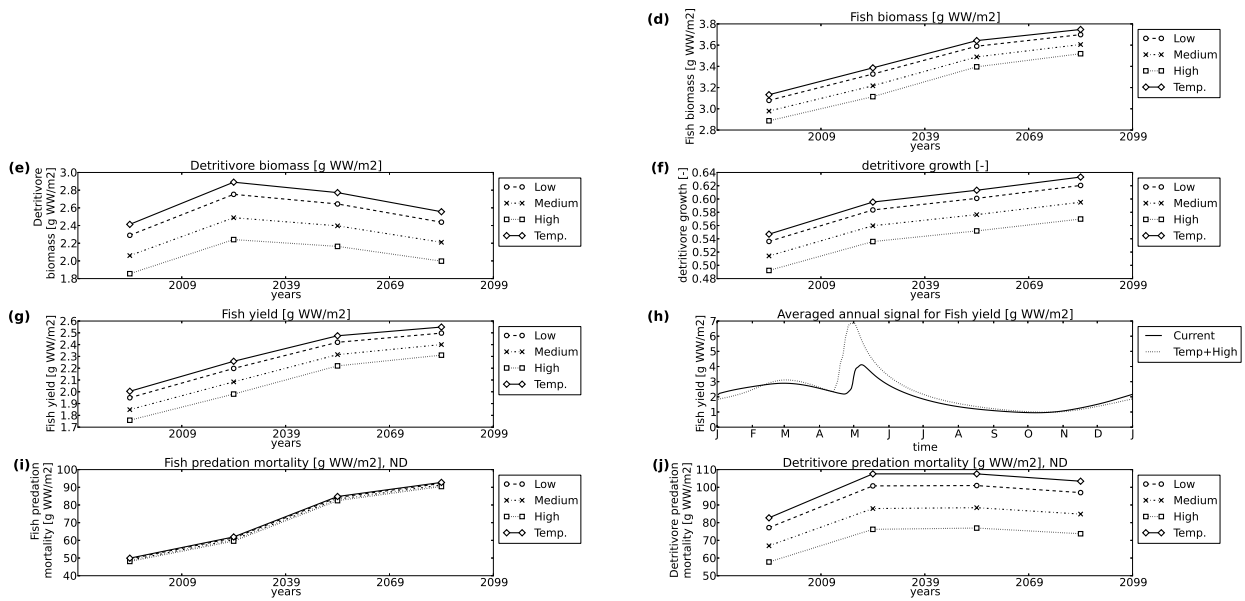


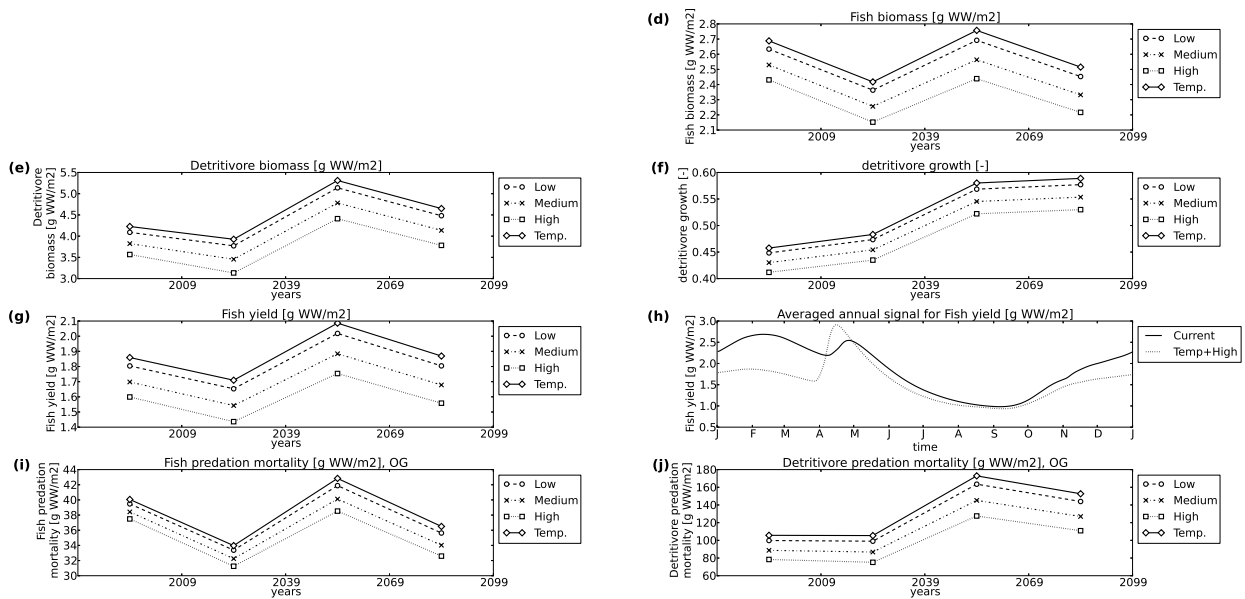
Figure S3: 30-year averaged values, climatic plus lower trophic level ocean acidification effects (CC + LTL OA): (a) phytoplankton changes [%] (only OA effects), (b) benthos changes [%] (only OA effects), both 2069-2098 change compared to 1979-2009, (c) plankton-based fish food, (d) fish or pelagic predator biomass, (e) detritivore biomass, (f) detritivore growth rates, (g) fish yield, (h) annual fish yield signal for the current time (1979-2008 climate scenario) and the high impact scenario (2069-2098 climatic plus LTL acidification effects) signal, (i) predated biomass for pelagic predators and (j) predated biomass for detritivores. Note that figures (a) and (b) do not include temperature effects: as they are the same as those in the main paper we present them without climate effects to highlight acidification effects.

## North Dogger



*Figure S4:* 30-year averaged values, climatic plus higher trophic level ocean acidification effects (CC + HTL OA): (d) fish or pelagic predator biomass, (e) detritivore biomass, (f) detritivore growth rates, (g) fish yield, (h) annual fish yield signal for the current time (1979-2008 climate scenario) and the high impact scenario (2069-2098 climatic plus HTL acidification effects) signal, (i) predated biomass for pelagic predators and (j) predated biomass for detritivores. Note that subfigures a, b and c (related to the lower trophic level model) do not change in this scenario except for climatic effects: figure notation has been kept the same as those used in other figures for easy comparison.

## Oyster Grounds



*Figure S5: 30-year averaged values, climatic plus higher trophic level ocean acidification effects (CC + HTL OA): (d) fish or pelagic predator biomass, (e) detritivore biomass, (f) detritivore growth rates, (g) fish yield, (h) annual fish yield signal for the current time (1979-2008 climate scenario) and the high impact scenario (2069-2098 climatic plus HTL acidification effects) signal, (i) predated biomass for pelagic predators and (j) predated biomass for detritivores. Note that subfigures a, b and c (related to the lower trophic level model) do not change in this scenario except for climatic effects: figure notation has been kept the same as those used in other figures for easy comparison.*

### Southern Bight (Sean Gas Field)

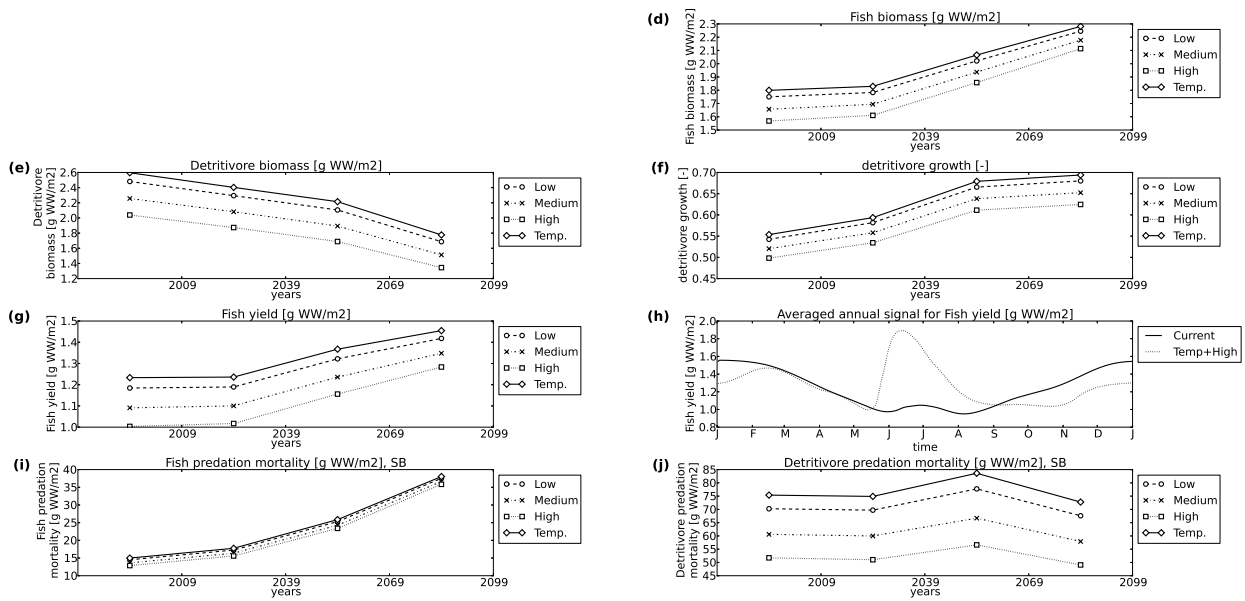


Figure S6: 30-year averaged values, climatic plus higher trophic level ocean acidification effects (CC + HTL OA): (d) fish or pelagic predator biomass, (e) detritivore biomass, (f) detritivore growth rates, (g) fish yield, (h) annual fish yield signal for the current time (1979-2008 climate scenario) and the high impact scenario (2069-2098 climatic plus HTL acidification effects) signal, (i) predated biomass for pelagic predators and (j) predated biomass for detritivores. Note that subfigures a, b and c (related to the lower trophic level model) do not change in this scenario except for climatic effects: figure notation has been kept the same as those used in other figures for easy comparison.