

Supplementary materials

North Dogger

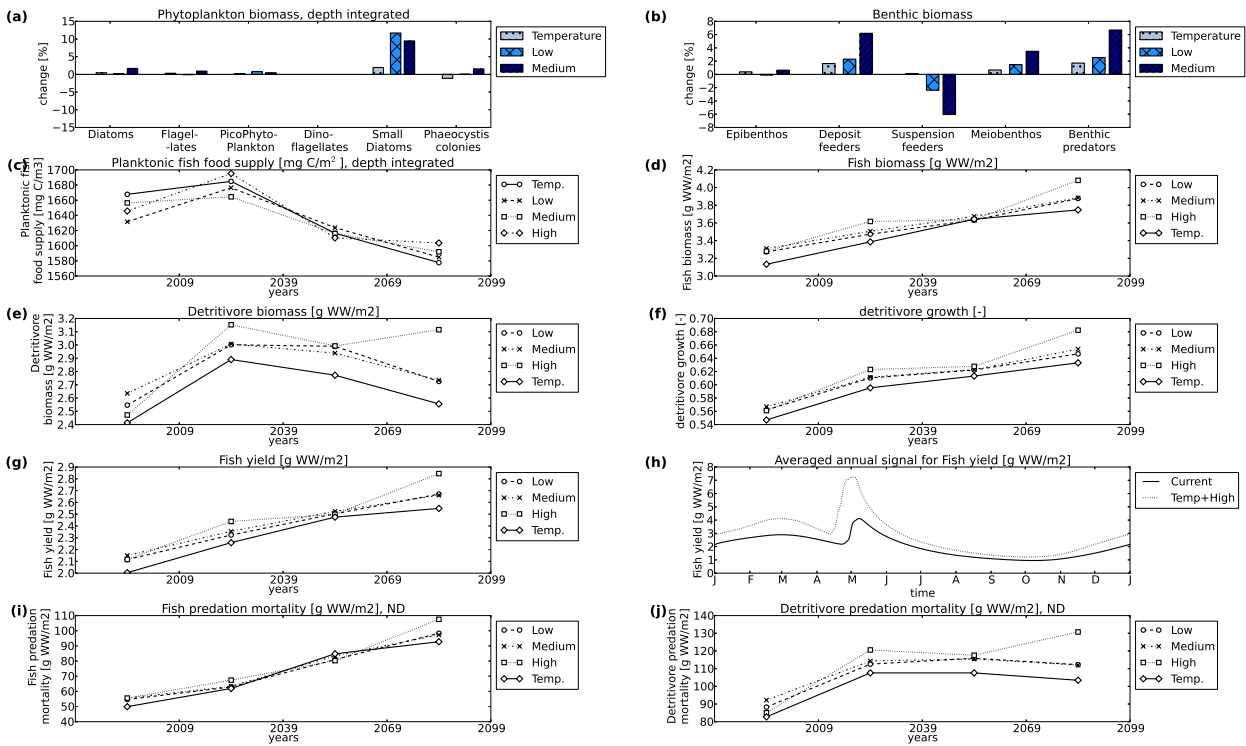


Figure S1: North Dogger: 30-year averaged values, climatic plus lower trophic level ocean acidification effects (CC + LTL OA): (a) phytoplankton changes [%] (only OA effects), (b) benthos changes [%] (only OA effects), (c) plankton-based fish food, (d) fish or pelagic predator biomass, (e) detritivore 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

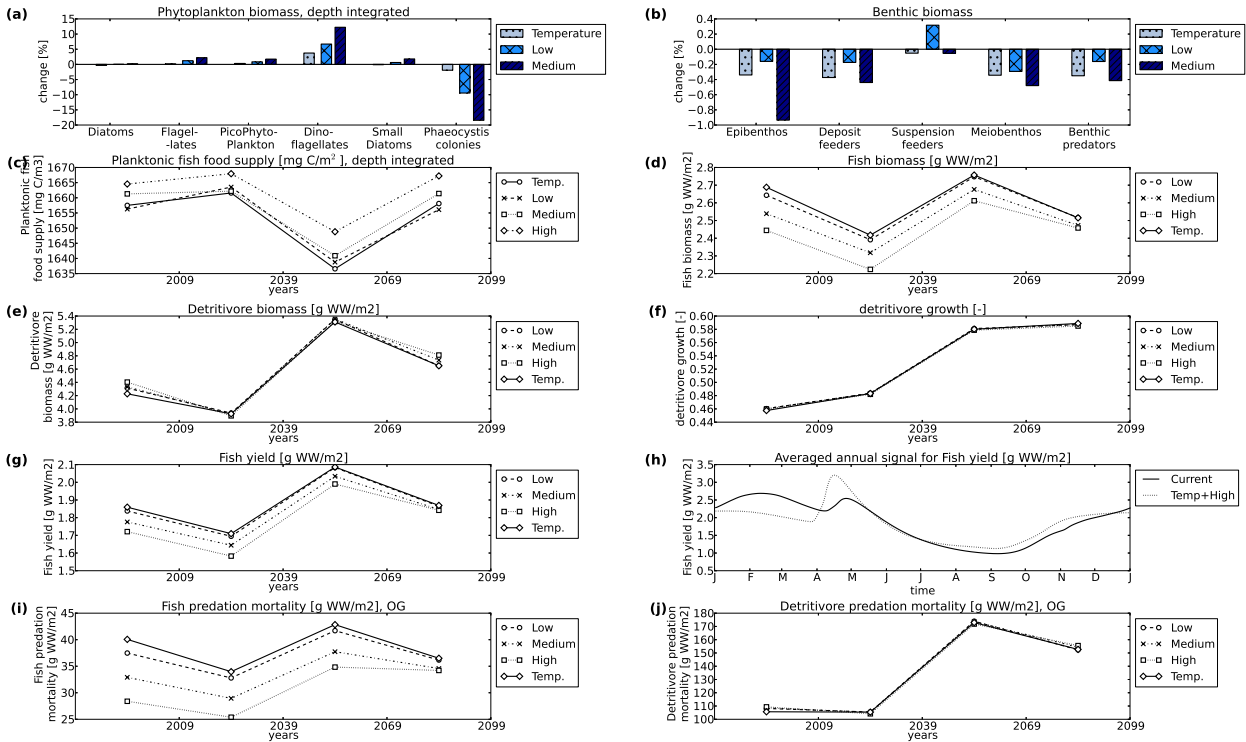


Figure S2: 30-year averaged values, climatic plus lower trophic level ocean acidification effects (CC + LTL OA): (a) phytoplankton changes [%] (only OA effects), (b) benthos changes [%] (only OA effects), (c) plankton-based fish food, (d) fish or pelagic predator biomass, (e) detritivore biomass, (f) 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)

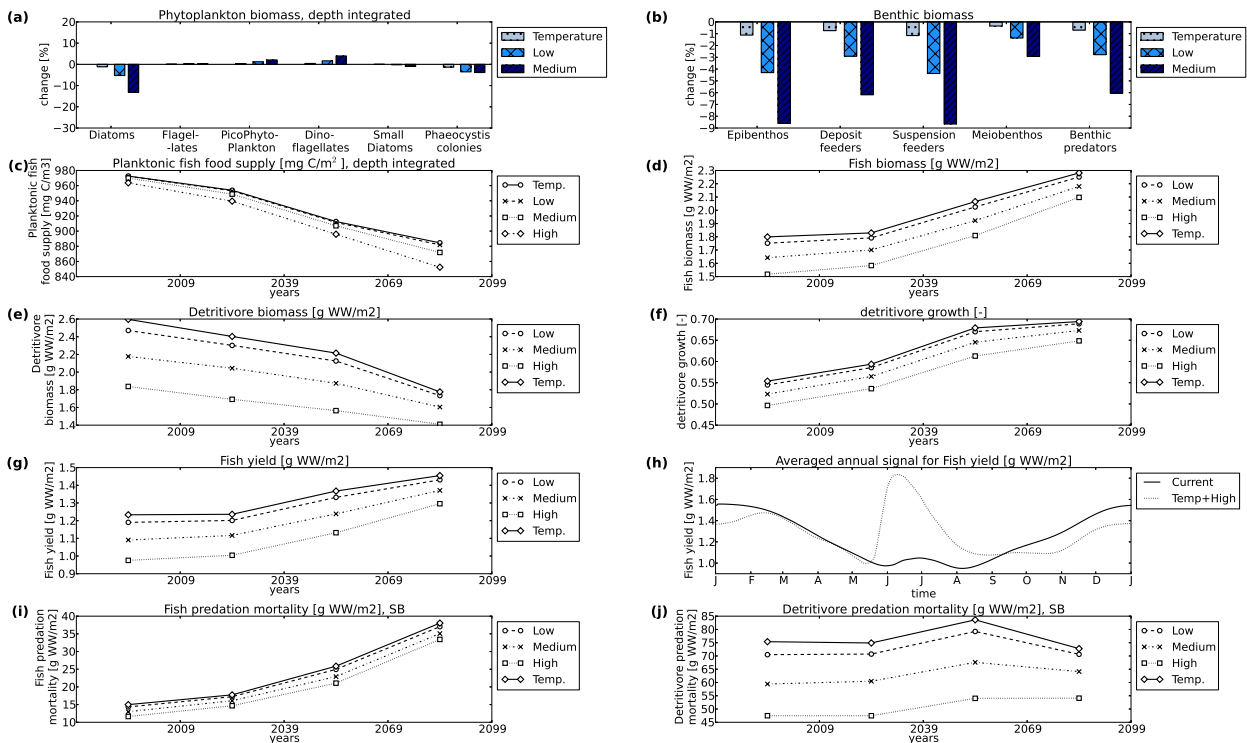


Figure S3: 30-year averaged values, climatic plus lower trophic level ocean acidification effects (CC + LTL OA): (a) phytoplankton changes [%] (only OA effects), (b) benthos changes [%] (only OA effects), (c) plankton-based fish food, (d) fish or pelagic predator biomass, (e) detritivore biomass, (f) 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

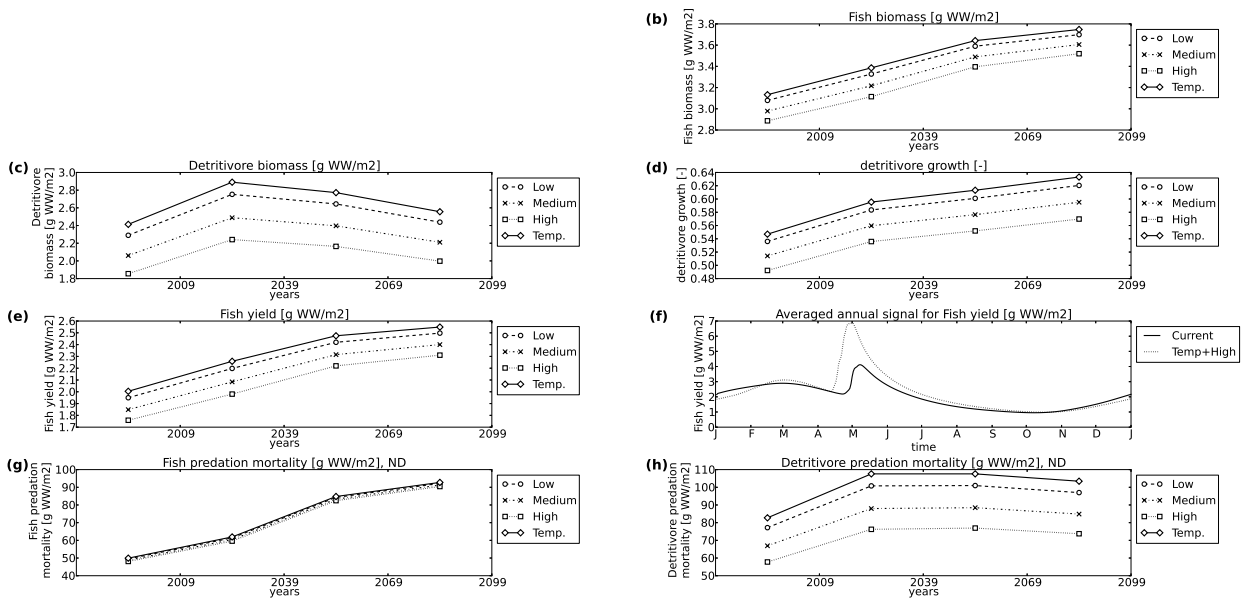


Figure S4: 30-year averaged values, climatic plus higher trophic level ocean acidification effects (CC + HTL OA): (d) fish or pelagic predator biomass, (e) detritivore biomass, (f) detritivore growth rates, (g) fish yield, (h) annual fish yield signal for the current time (1979-2008 climate scenario) 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

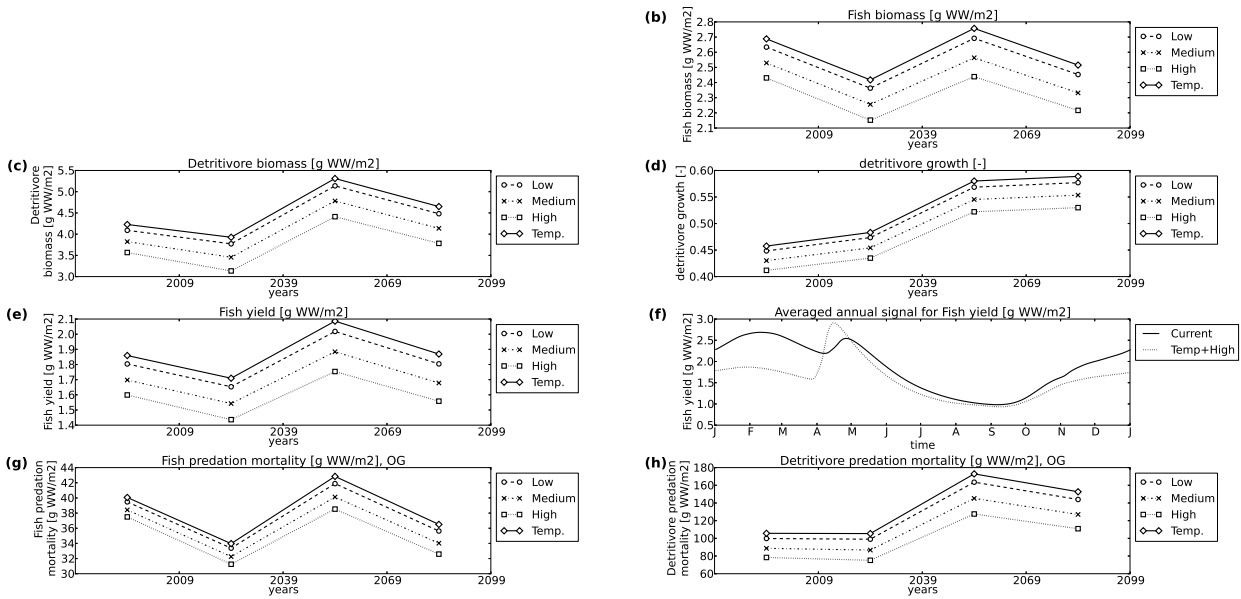


Figure S5: 30-year averaged values, climatic plus higher trophic level ocean acidification effects (CC + HTL OA): (d) fish or pelagic predator biomass, (e) detritivore biomass, (f) detritivore growth rates, (g) fish yield, (h) annual fish yield signal for the current time (1979-2008 climate scenario) 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)

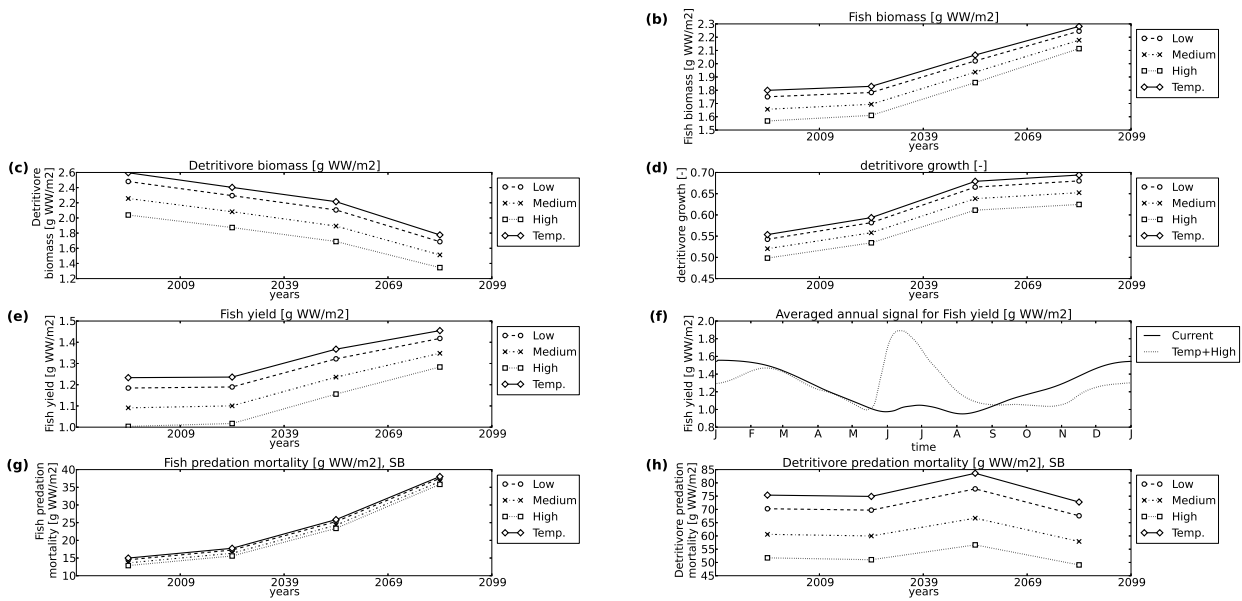


Figure S6: 30-year averaged values, climatic plus higher trophic level ocean acidification effects (CC + HTL OA): (d) fish or pelagic predator biomass, (e) detritivore biomass, (f) detritivore growth rates, (g) fish yield, (h) annual fish yield signal for the current time (1979-2008 climate scenario) 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.