

The need for research on
ocean acidification
and fisheries
Seafood industry perspectives

Testimony of Brad Warren
Sustainable Fisheries Partnership
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Thank you!

- It's an honor to be here, heartening to see this problem drawing real attention.
- The scientists who are here today deserve medals for bringing this problem to light.
- Early warning reveals a key: we are the first generation in history that has a fighting chance against such a global problem.

Personal background & interest

- 25 years as journalist and consultant working in fisheries & oceans
- Was editor of Pacific Fishing Magazine for eight years
- Built the Productive Oceans Partnership, a program of SFP, because acidification looks to be an overriding challenge for fisheries.
- Believe the seafood industry will play a key role defending the ocean that feeds us from effects of excessive CO₂ concentrations.

Disclaimers

- We advise but do not represent industry.
- Most listen, some agree, some don't.
- Strong agreement on **importance** of this problem, but not all share our view about its level of **urgency**.

Our view on emissions and research policy

- We support emissions-reduction policies in the U.S. and globally.
- We support national investment in research to understand ocean acidification impacts—so that fisheries can be managed as the ocean changes.
- Acidification is a more clear-cut problem for fisheries than warming.

Early impacts of acidification for fisheries

- Mainly a new source of uncertainty
 - in fishery productivity
 - in financial planning
- For some, possibly an immediate threat
 - e.g. Pacific Coast Shellfish Growers Assoc.

Acidification risks for seafood industry

- Risk of reduced productivity of fish stocks.
 - *Diminished productivity of key plankton species ==> fewer fish?*
 - *Reduced productivity in shellfish?*
- Risk of market confusion: Though supply may diminish, strong science-based fishery governance (for example in Alaska) will likely ensure that you can eat the fish on your plate in good conscience. Will retailers, consumers recognize this?
- Risk of “panic button” management. Fishery management is like monetary policy: over-reaction can be costly, under-reaction worse. As with the Fed, strong nerves are required.

How will a high-CO₂ ocean affect fishery productivity?

- Research is urgently needed.
- Delay will leave industry exposed to sudden shocks.
Without expanded data and ecosystem modeling, fisheries could become much harder to manage.
- Worst case: decline or outright collapse.
- Best case: manage change by understanding effects on fisheries and underlying ecosystems. Develop adaptive methods of production.

Is acidification hurting fisheries now?

- Very little research so far.
- Possibly oysters (see Brett Bishop testimony on 5.27.08)
- Other potential “signs”— known but not yet studied for acidification impacts:
 - scallops show slow growth, fragile shells in some areas (cause unknown)
 - Reduced forage abundance (cause unknown)
 - West Coast hypoxic “dead zone” and salmon? (GHG effect?)
 - Fish stocks that show long-term declines despite very low fishing pressure. (cause unknown)

Multiple causes are possible, even likely.

Shellfish farmers

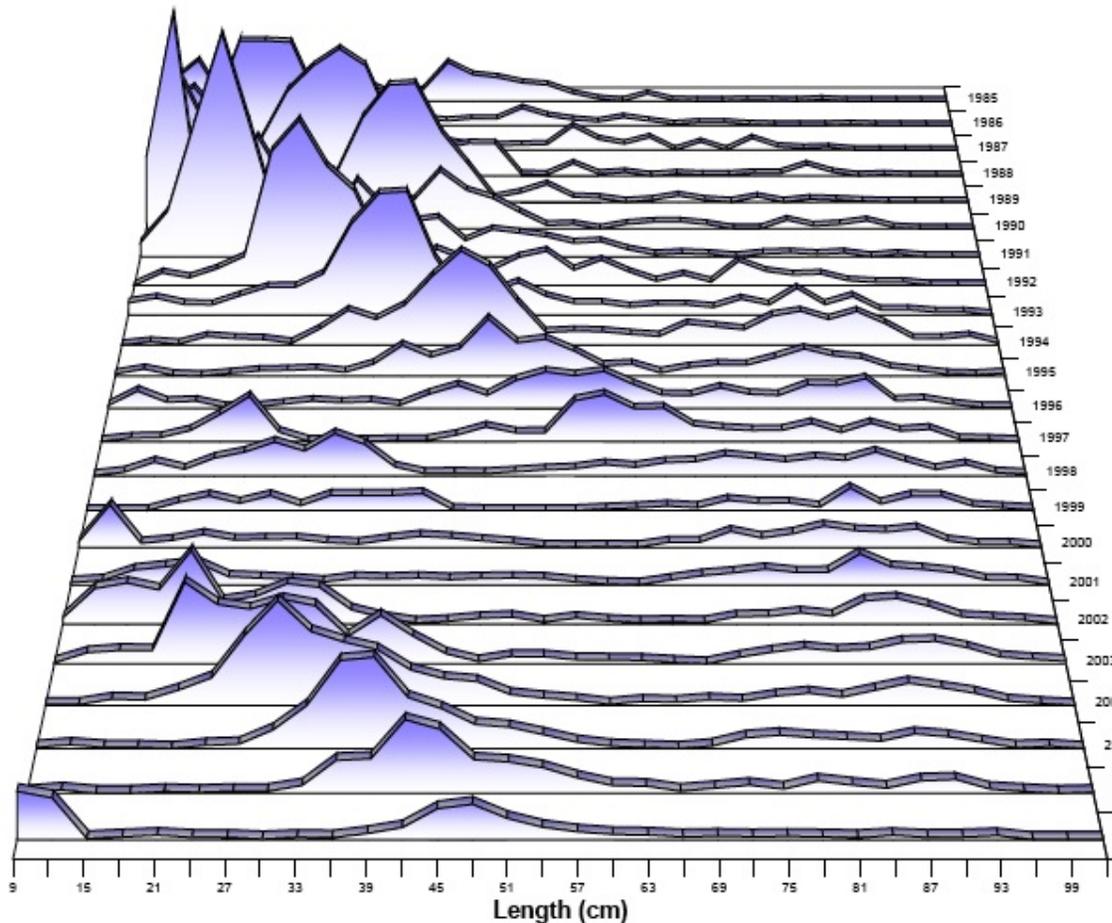
Hypoxia (attributed to GHG emissions): “...the current situation puts both the marine eco-system and shellfish growers in extreme jeopardy...”

Acidification: “This acidity dissolves calcium carbonate, the stuff that shells are made of. If diatoms, corals and shellfish succumb to this, it might collapse not only the shellfish industry, but also the entire marine food chain.”

—**Brett Bishop, Little Skookum Shellfish**, representing **Pacific Coast Shellfish Growers Assoc.** From May 27, 2008 testimony to Senate Commerce, Science & Transportation Committee, referring to effects of climate change/dead zone/acidification.

Greenland turbot

Could future fish stock response look like this?



Lightly fished:
harvest rates below
7% since 1984,
below 1.8% in
2007

Source: stock
assessment,
BSAI Greenland
turbot, NMFS
2007.

Figure 5.7. Abundance-at-length (cm) for Greenland turbot observed from the summer NMFS shelf trawl surveys, 1985-2007 (sexes combined, all strata except for 1986 where only strata 1-6 were sampled).

Some info fisheries will need

- Which commercial species are more vulnerable, which less so?
- Rate: Will fish abundance change quickly or slowly?
- How to estimate sustainable yields?
- Adaptive seafood-production methods?
- Technical and policy tools to solve root problem (high CO₂ concentrations)?

Industry perspectives on FOARAM

- The need for research is well-accepted.
- BUT: Concern about potential for “robbing Peter to pay Paul.”
- Regular fish-stock surveys are critical to manage fisheries.
- Even under budget constraints, surveys and acidification research are both vital.