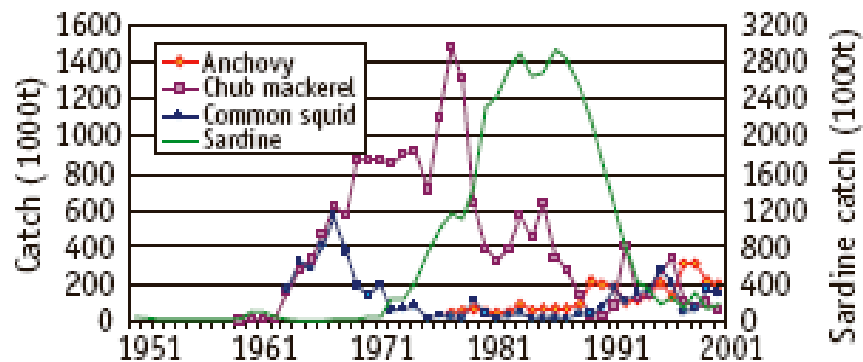


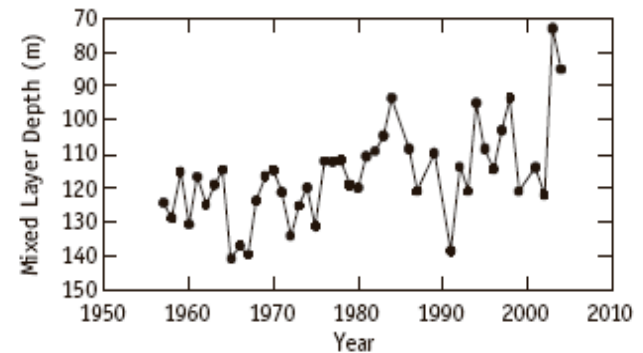
- **277 pages (publ. 2004)**
- **10 geographic regions**
- **3 fish species**
- **8 member working group (est. 2002)**
- **16 working group participants (met 2003)**
- **10 lead authors**
- **121 contributors**



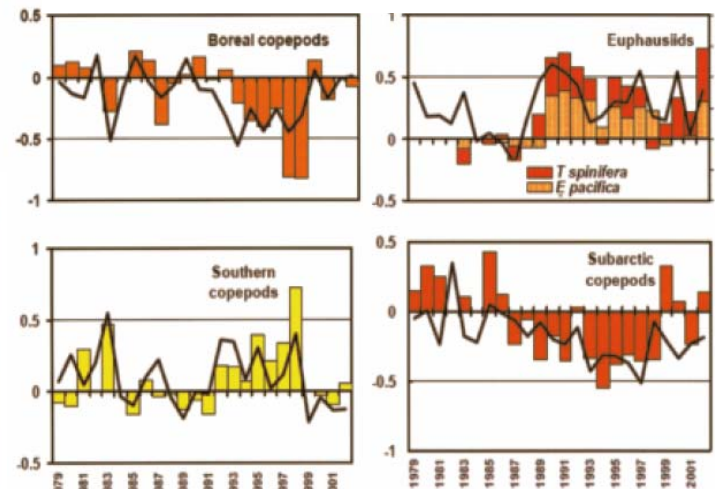
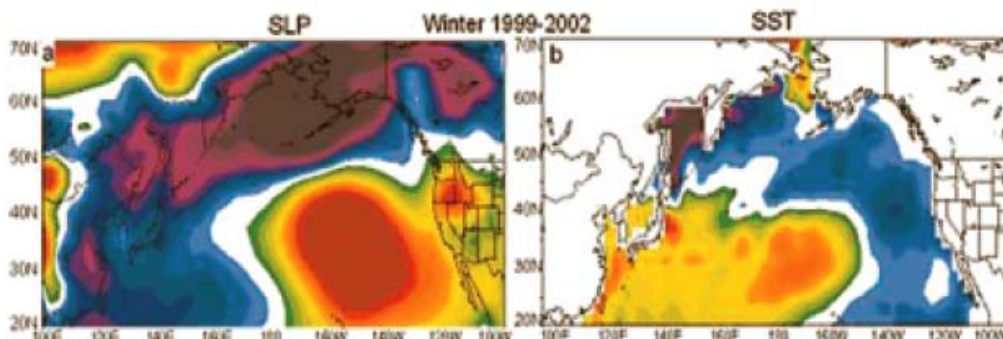
Yes, we have time series!!



[Figure 81] Japanese catch of sardine, anchovy, chub mackerel and common squid along the Pacific coast of Japan.



[Figure 3] Depth of the winter mixed layer at Ocean Station Papa (50°N 145°W)¹



[Figure 128] Annual zooplankton anomalies (1979–2002) averaged across southern Vancouver Island statistical areas and within groups of ecologically similar species (coloured columns). Lines show fits to the zooplankton anomaly time series from stepwise regressions on 1985–1998 time series of environmental indices: large-scale (solid lines). Note the continuing “predictive” fit 1979–2002.²⁷² updated

synthesis

During the past five years, profound changes have occurred in the North Pacific climate system, in the characteristics of the North Pacific Ocean, in the composition, abundance, and distribution of its living marine resources, and in the human

critical factors causing change

The CCS was impacted by a rare and unusually strong intrusion of subarctic water during 2002.³⁴² The impact was observed from 49°N (Vancouver Island) to 33°N (southern California), a distance of over 1500 km. The intrusion was characterized by cold, fresh water mass in the upper halocline, with temperature and salinity anomalies more extreme than any seen previously in a historical record that extends for nearly 50 years in some locations. The subarctic anomaly brought

Two large-scale North Pacific climate indices, the Northern Oscillation Index³¹ and the Pacific Decadal Oscillation²³, reversed sign in summer 2002 along with the development of the El Niño, indicating a switch to warmer conditions in the CCS for the first time since 1998. However, both indices again reversed sign by summer 2003, after the El Niño had dissipated. Most recent data suggest a return to cooler conditions in

issues

It appears that harmful algal bloom events (HABs) are increasing in intensity, frequency, duration, and geographical location; however the long term observations needed to substantiate such trends are often lacking. Examination of the past 40 years of paralytic shellfish poisoning (PSP) data for Puget Sound has revealed significant trends.

key messages

Climate

- A new atmospheric pattern altered storm tracks across the North Pacific after 1998. Historically, winter atmospheric pressure patterns were often characterised by a low pressure region occupying most of the subarctic North Pacific. This pattern tends to warm the North American coast and cool the Asian coast. Between 1998/99 – 2002, this low pressure pattern moved to occupy a region extending from northeastern China/Russia, across the Bering Sea to Canada, with a high pressure center occupying much of the south-eastern North Pacific in the area west of California and north of Hawaii.
- This new climate pattern was associated with a change from warm to cool conditions from northern Vancouver Island to the Baja Peninsula, warming in the central Pacific (north and west of Hawaii), but had little effect in the northern Gulf of Alaska and Bering Sea which stayed warm, or the Okhotsk Sea which stayed cool.
- A moderate El Niño developed in winter 2002/03 which warmed the coastal waters of North America but its effects had disappeared by winter 2003/04.

background*

The Bering Sea is a semi-enclosed high-latitude sea with a deep basin (3,500 m), and shallow (<200 m) continental shelves. The broad shelf in the east contrasts with a narrow shelf in the west.²¹⁹

In summer on the eastern shelf, coastal, middle, and outer domains can be distinguished by their hydrography and circulation patterns. The domains are separated by fronts that constrain cross-shelf exchange and are important locations for ecosystem interactions. Similar frontal zones exist in the western part, but

Forage fishes such as capelin (*Mallotus villosus*), eulachon (*Thalichthys pacificus*), deep sea smelts (Bathylagidae), myctophids, Pacific sand lance (*Ammodytes hexapterus*), and Atka mackerel (*Pleurogrammus monopterygius*) and juvenile cephalopods can be locally abundant. These are prey

What will the new NPESR look like?

Product	Audience	Period	Form	Who
Time Series	Scientists, Public	Annual	Web	?
Syntheses / Interpretations of Ecosystem Status	Scientists, Public, Policy Makers	3 – 5 yr	Web & Hardcopy	Working Group
Outlooks	Policy Makers	5 - 10	Brochure	Study Group

What might the web product look like?



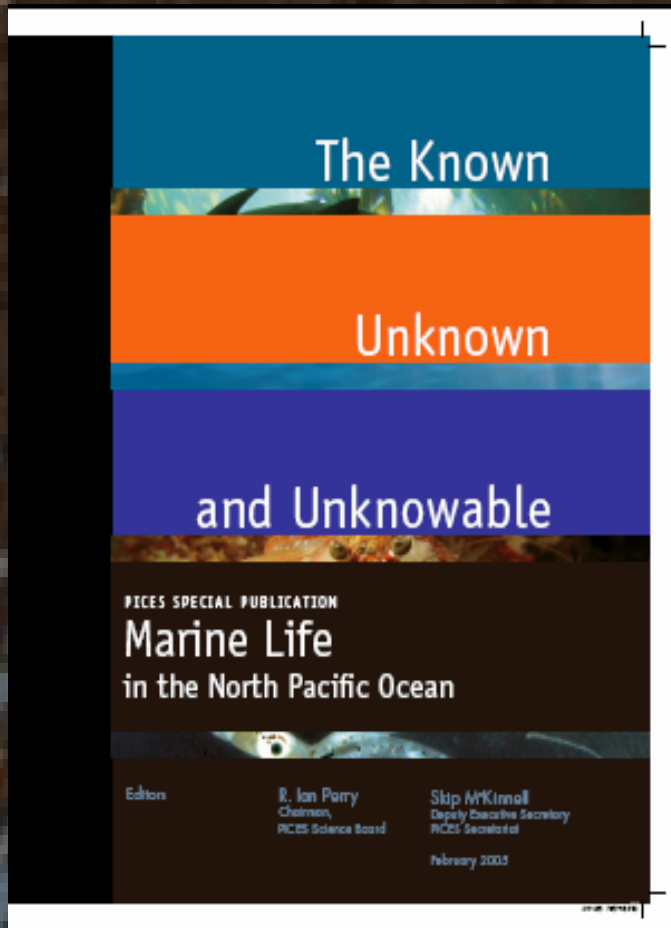
• Data Descriptions

• Relevance

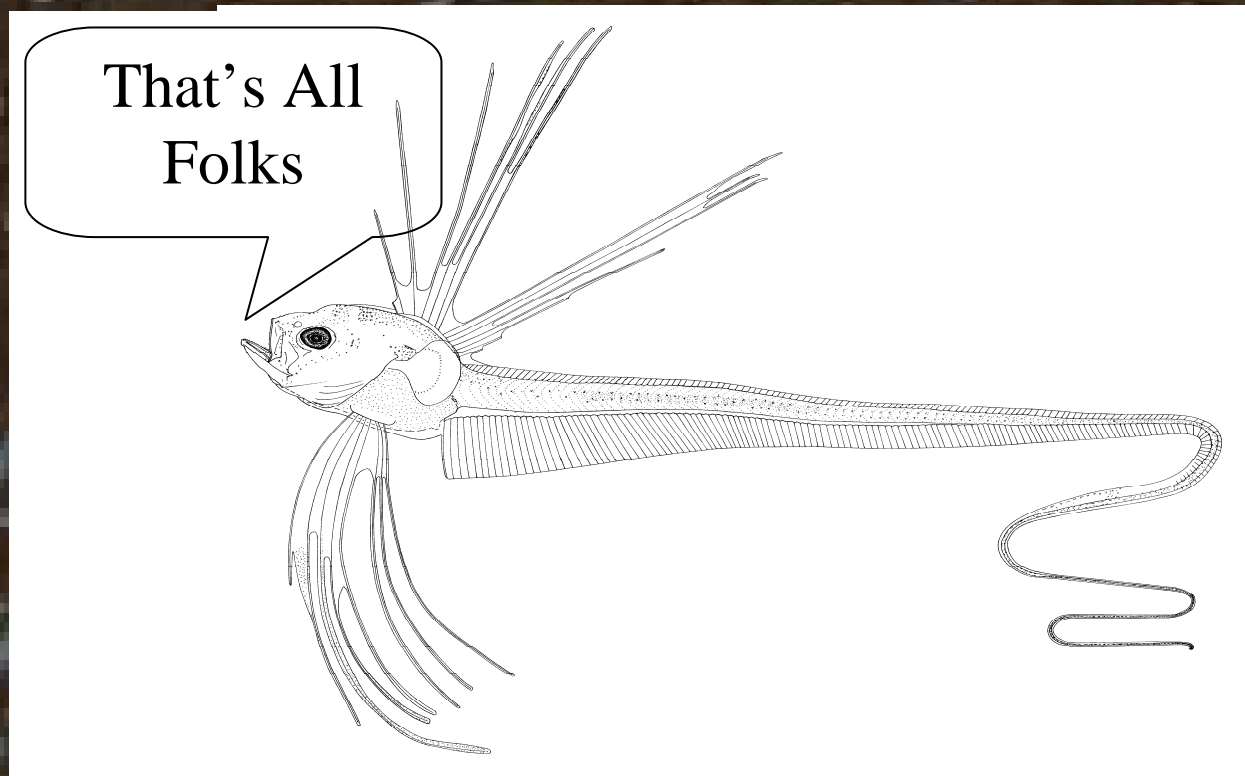
• Recent Trends

• Statistical Tools

Is there a model for the Outlooks?



What is missing from these reports?



Coryphaenoides sp. UW 095121, 5.1 mm HL
(55.2 mm SL, 80.5 mm TL). Bar 5.0 mm