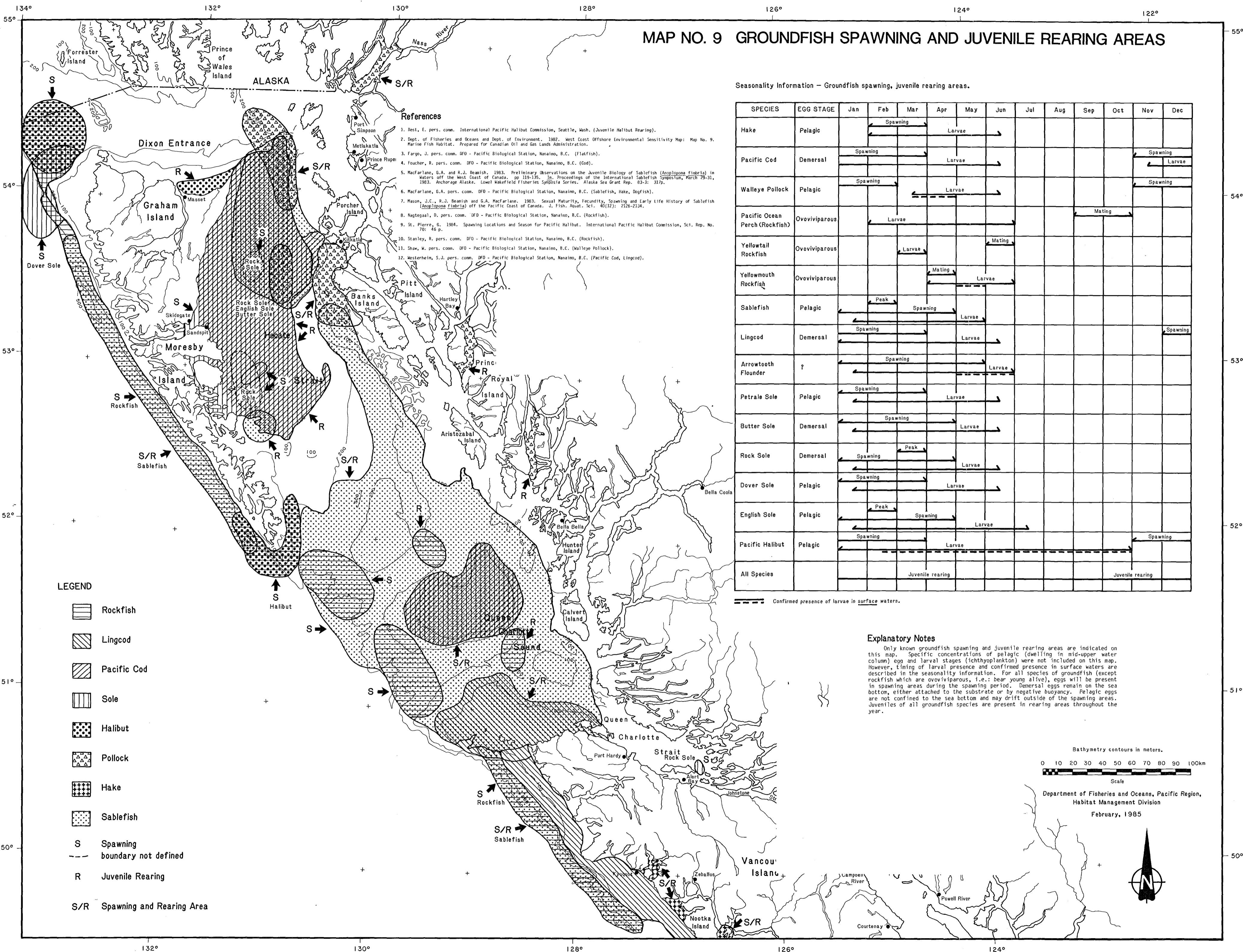


MAP NO. 9 GROUND FISH SPAWNING AND JUVENILE REARING AREAS



References

1. Best, E. pers. comm. International Pacific Halibut Commission, Seattle, Wash. (Juvenile Halibut Rearing).
2. Dept. of Fisheries and Oceans and Dept. of Environment, 1982. West Coast Offshore Environmental Sensitivity Map: Map No. 9. Marine Fish Habitat. Prepared for Canadian Oil and Gas Lands Administration.
3. Fargo, J. pers. comm. DFO - Pacific Biological Station, Nanaimo, B.C. (Flatfish).
4. Foucher, R. pers. comm. DFO - Pacific Biological Station, Nanaimo, B.C. (Cod).
5. MacFarlane, G.A. and R.J. Beamish, 1983. Preliminary Observations on the Juvenile Biology of Sablefish (*Anoplopoma fimbria*) in Waters off the West Coast of Canada. pp 119-135. In: Proceedings of the International Sablefish Symposium, March 29-31, 1983. Anchorage Alaska. Lower Hakes Fisheries Synopsia Series, Alaska Sea Grant Rep. 83-2: 216-234.
6. MacFarlane, G.A. pers. comm. DFO - Pacific Biological Station, Nanaimo, B.C. (Sablefish, Hake, Dogfish).
7. Mason, J.C., R.J. Beamish and G.A. MacFarlane, 1983. Sexual Maturity, Fecundity, Spawning and Early Life History of Sablefish (*Anoplopoma fimbria*) off the Pacific Coast of Canada. J. Fish. Res. Bd. Can. 40(12): 2168-2194.
8. Nagtegaal, D. pers. comm. DFO - Pacific Biological Station, Nanaimo, B.C. (Rockfish).
9. St. Pierre, G., 1984. Spawning Locations and Season for Pacific Halibut. International Pacific Halibut Commission, Sci. Rep. No. 70: 46 p.
10. Stanley, R. pers. comm. DFO - Pacific Biological Station, Nanaimo, B.C. (Rockfish).
11. Shaw, W. pers. comm. DFO - Pacific Biological Station, Nanaimo, B.C. (Walleye Pollock).
12. Westerheim, S.J. pers. comm. DFO - Pacific Biological Station, Nanaimo, B.C. (Pacific Cod, Lingcod).

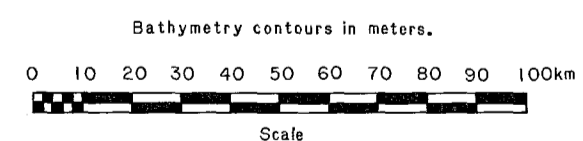
Seasonality Information - Groundfish spawning, juvenile rearing areas.

SPECIES	EGG STAGE	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hake	Pelagic	Spawning		Larvae									
Pacific Cod	Demersal	Spawning		Larvae								Spawning	Larvae
Walleye Pollock	Pelagic	Spawning		Larvae									Spawning
Pacific Ocean Perch (Rockfish)	Ovoviparous	Larvae					Mating						
Yellowtail Rockfish	Ovoviparous	Larvae					Mating						
Yellowmouth Rockfish	Ovoviparous			Mating			Larvae						
Sablefish	Pelagic	Peak		Spawning			Larvae						
Lingcod	Demersal	Spawning		Larvae									Spawning
Arrowtooth Flounder	?	Spawning		Larvae									
Petrale Sole	Pelagic	Spawning		Larvae									
Butter Sole	Demersal	Spawning		Larvae									
Rock Sole	Demersal	Spawning		Peak		Larvae							
Dover Sole	Pelagic	Spawning		Larvae									
English Sole	Pelagic	Peak		Spawning			Larvae						
Pacific Halibut	Pelagic	Spawning		Larvae						Spawning			
All Species					Juvenile rearing						Juvenile rearing		

Confirmed presence of larvae in surface waters.

Explanatory Notes

Only known groundfish spawning and juvenile rearing areas are indicated on this map. Specific concentrations of pelagic (dwelling in mid-upper water column) egg and larval stages (ichthyoplankton) were not included on this map. However, timing of larval presence and confirmed presence in surface waters are described in the seasonality information. For all species of groundfish (except rockfish which are ovoviparous, i.e., bear young alive), eggs will be present in spawning areas during the spawning period. Demersal eggs remain on the sea bottom, either attached to the substrate or by negative buoyancy. Pelagic eggs are not confined to the sea bottom and may drift outside of the spawning areas. Juveniles of all groundfish species are present in rearing areas throughout the year.



Department of Fisheries and Oceans, Pacific Region, Habitat Management Division
February, 1985

