Inshore rockfish
Sebastes spp.

- rocky reefs to 200 m
- small home range
- piscivorous
- hook & line gear
  - commercial, sport, subsistence
- physoclistic
- long-lived
- late maturing
- sporadic good recruitment
Catch History

Early catches incidental to halibut & lingcod fisheries

1977 – expansion of the commercial fishery
1986 – introduce commercial ZN licence
1991 – set a Total Allowable Catch (TAC)
1992 – reduced TACs
1992/3 – implement limited entry licensing
1995 – 100% Dockside Monitoring Program – species id
1998 – 5% at sea observer
1999 – area closures for directed fleets
Stock Status

Catch per Unit Effort Indices
Hyperstable - Declining

local area depletion  declining stocks
misreporting  high grading  discarding
Total Mortality Estimates

Catch curve analysis (Ricker 1973)

Target F = 0.5 M

Walters & Parma 1998
SSC 2001

Current F >> 0.5 M

unsustainable
Inshore Rockfish Conservation Strategy

• account for all catch ???
• reduce fishing mortality TAC
• establish areas closed to all fishing where?
• improve stock monitoring & assessment
• public awareness / education
Multi-stakeholder meeting

- inshore rockfish conservation concern
- introduced the Rockfish Conservation Strategy
- requested input
  - on the Rockfish Conservation Strategy
  - their knowledge to site closed areas
- follow-up meetings with advisory groups

Support for the Rockfish Conservation Strategy

Stakeholders committed to the consultation process
Inshore Rockfish Conservation Strategy

• account for all catch

• reduce fishing mortality

• establish areas closed to all fishing

• improve stock monitoring & assessment

50 - 75% reduction in TAC
Closed Areas

- defined as a spatial management tool
- zero mortality of rockfish
- minimize impacts to existing fisheries
- consensus based
- full consultation
Closed Areas

Consultation with stakeholders to site closures

1. identify areas
   * areas important for rockfish
   * areas to conduct other directed fisheries

2. fishery catch data review
   * feedback through advisory groups
   * use of website for comments

3. Rockfish habitat model (measurement tool)
   * extensive consultations
2002 stakeholder input
Selected overlapping areas
1% of rockfish habitat area
2002 stakeholder input
Selected overlapping areas
1% of rockfish habitat area

2004 DFO fishery review
8% of rockfish habitat area
Rockfish habitat model

Fisher log CPUE density analysis

Change in slope bathymetry analysis

Fishing ground + complex bottom

Rockfish "habitat"
Inshore Rockfish Conservation Strategy

- account for all catch
- reduce fishing mortality
  - 50 - 75% reduction in TAC
- establish areas closed to all fishing
  - 20% & 30% of rockfish habitat
- improve stock monitoring & assessment
Surveys: data mining with Int. Pacific Halibut Commission

**Yelloweye Rockfish**

- 2003-2007: annual growth rate = 0.076, series growth rate = 0.339
- 1995-2007: annual growth rate = -0.11, series growth rate = -0.755

**Quillback rockfish**

- Log2 cpue
Initiated coastwide longline surveys in collaboration with industry.
Inshore Rockfish Conservation Strategy

- account for all catch
- reduce fishing mortality
  - 50 - 75% reduction in TAC
- establish areas closed to all fishing
  - 20 - 50% of rockfish habitat
- improve stock monitoring & assessment
  - Surveys
demersal longline catch
Catch accounting: Industry driven process

Groundfish Licence Integration Plan
- purpose is to eliminate ‘bycatch’

- relax license limitations
- individual transferable quotas for species
- quota trading among vessels fleets
- quota trading among fleet sectors
- 100% at-sea monitoring
- 100 % dockside monitoring
- individual accountability for catch
Inshore Rockfish Conservation Strategy

• account for all catch
  - Groundfish licence integration
• reduce fishing mortality
  - 50 - 75% reduction in TAC
• establish areas closed to all fishing
  - 20 - 50% of rockfish habitat
• improve stock monitoring & assessment
  - Surveys
  - Stock Assessment Model
Science Managers Advice
Stakeholders
can lead to better decision making in management.