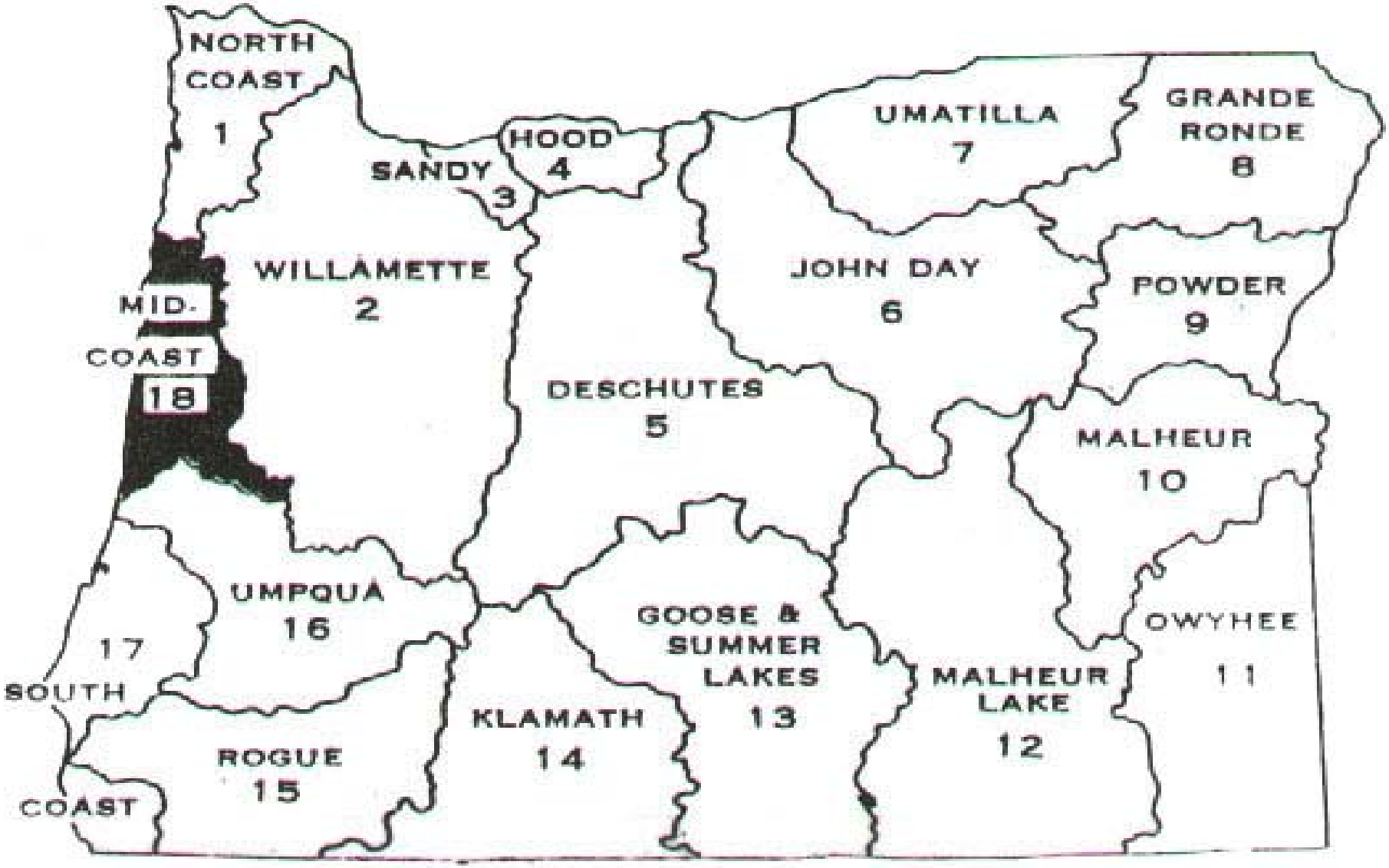
Mid Oregon Coast coho salmon management considerations

- Prioritization of basins for coho
- Habitat
- Fish harvest
- Hatcheries
- Research ideas

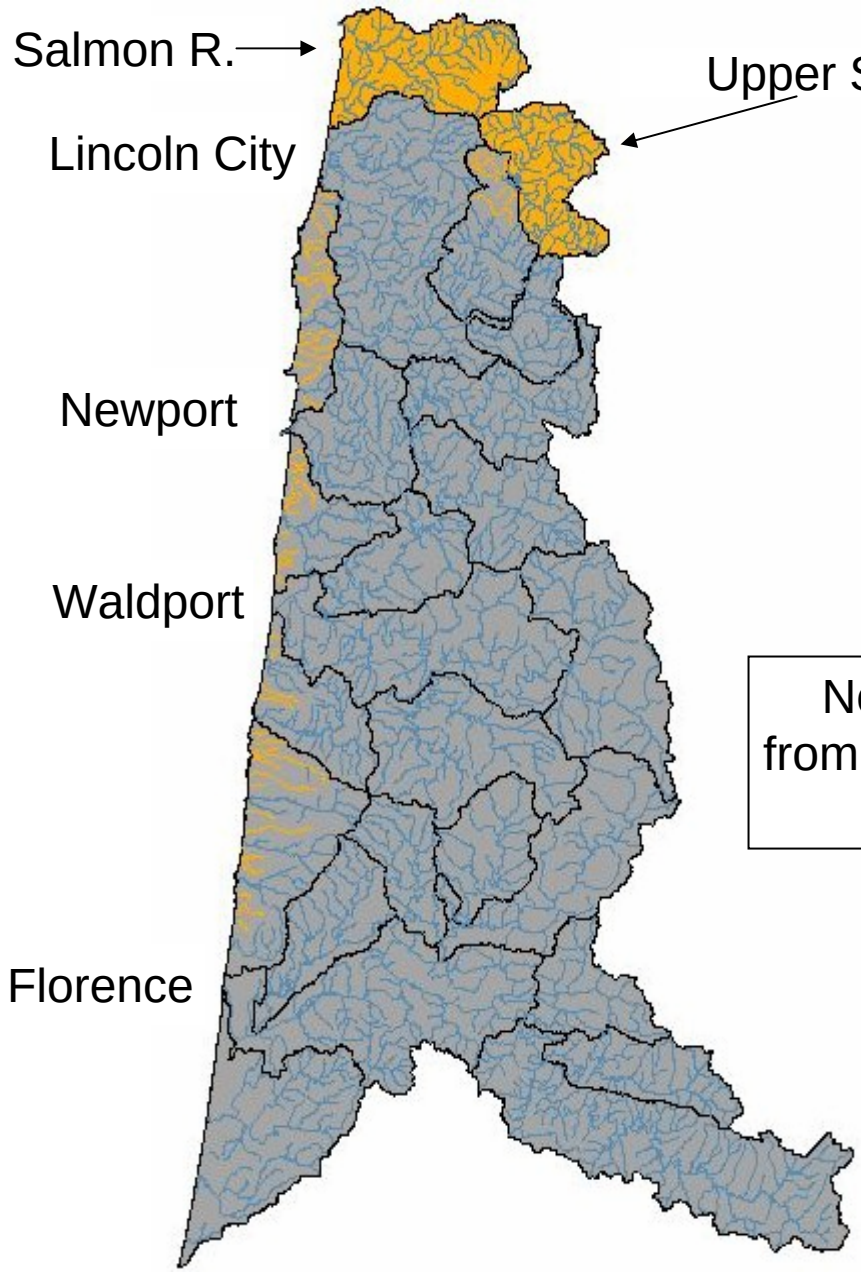
DRAINAGE BASIN KEY



Priority areas for coho salmon

- First priority to ensure all independent populations achieve & maintain level of health beyond viability (pass +).
  - Excludes Salmon River.
  - Assume Siletz and Alsea viability addressed through hatchery changes already made.
  - For habitat improvement and protection, all major basins (Siletz, Yaquina, Alsea and Siuslaw) are equal priority.
- To achieve desired status, smaller basins with consistent late spawners and corresponding juveniles (i.e. Devils Lake, Yachats, Mercer/Sutton lakes, etc.) are of equal importance for habitat improvement and protection.

Coho salmon priority areas for habitat management



Priority area

Non priority area

Non priority areas upstream from natural falls are not identified

Other co-occurring fish to consider while managing coho salmon

- Fall chinook salmon
- Winter steelhead
- Cutthroat trout
- Other salmonids
  - Summer steelhead
  - Spring chinook
  - Chum salmon
- Lamprey
- Other non game fish

Major limiting factors

- High harvest in 1970’s and 80’s.
- Low survival of coho smolts in estuaries and ocean in the 1990’s.
  - Poor ocean conditions in combination with large hatchery programs may have induced heavy predation on smolts
- Freshwater habitat currently.
  - Winter habitat for juvenile coho most common

Habitat limiting factors for coho salmon

- Often channel complexity or winter habitat.
- Sometimes summer rearing.
- Connectivity/passage for juveniles and adults.
- Limiting life stage can vary between years.
  - I. E. Floods, droughts
- Multiple life stages may be limited.
- Uncertain in some areas.
  - I. E. coastal lakes

Habitat Strategies

- Emphasize protection of existing habitat.
- Advise and coordinate with other agencies and landowners to prevent or reduce loss of coho habitat.
- Pursue additional voluntary protection measures and habitat restoration in select locations where beneficial to coho salmon.

Habitat Restoration Projects

- Target coho salmon as primary consideration in restoration projects.
- Some restoration occurs in larger water with benefits to multiple species including coho salmon.
- Some restoration targets other fish species.

Selection of restoration projects

- Take advantage of available opportunities for projects to address coho salmon habitat limitations.
- Utilize Mid Coast Watershed Council 6th field watershed assessment approach (or similar approach) for identification of habitat restoration needs and opportunities.

Restoration projects

- Focus on a subset of high intrinsic potential habitat.
  - Target floodplains next to streams where it is possible to create flooded areas where juvenile coho will live during the winter.

Federal Forest Land

- Almost half the area in the mid coast is in Federal Ownership.
- Unevenly distributed across watersheds and mostly in steeper areas that are not best for coho salmon.
- Current management provides wide streamside buffers and prevents steep slope logging.
- Habitat restoration projects at select locations on Federal Land beneficial at speeding recovery.
  - Helicopter LWD additions.
  - Re-established floodplain interactions in acquired pastures (Karnowsky Creek, Baily Creek).

State and private forest lands

- Contains many streams with good coho salmon production.
- Focus efforts in floodplain areas along important coho production streams with the potential for winter flooding, to maintain and improve juvenile habitat.
  - Provide incentives, voluntary actions, etc.
- Improve habitat by artificially adding LWD in select sites.

Agricultural areas

- Limited agriculture in the mid coast.
- Focus restoration efforts in select high intrinsic potential areas.
- Target cooperative landowners.
- Re-establish floodplain connectivity.

Land Use Planning

- Minimize additional buildings in select high intrinsic potential habitats.
- Provide incentives to remove a few problematic structures.
- Adhere to setbacks from waterways.

Water Use

- Increasing demand from increasing population.
- Direct stream withdrawals detrimental to fish in the summer.
- Recommend alternatives to direct stream withdrawals to minimize impacts.
  As example:
  - Rocky Creek Reservoir for coastal Lincoln County.
  - For Lane Co. (Florence area), dunal aquifer provides an alternative to direct stream withdrawals.

Beaver benefits

- Beaver ponds provide premier coho habitat.
- Continue a broad based volunteer approach.
  - Work with landowners and trappers
  - Recommend to avoid recreational or damage trapping in areas where coho benefits are likely
  - Seek funding to replace culverts with bridges in key areas
- Intensively research management of beavers for coho salmon benefits in select sub-basins.
  - Measure habitat features and beaver abundance
  - Experimental trapping limitations
  - Consider flexibility in temperature standards in and around beaver ponds

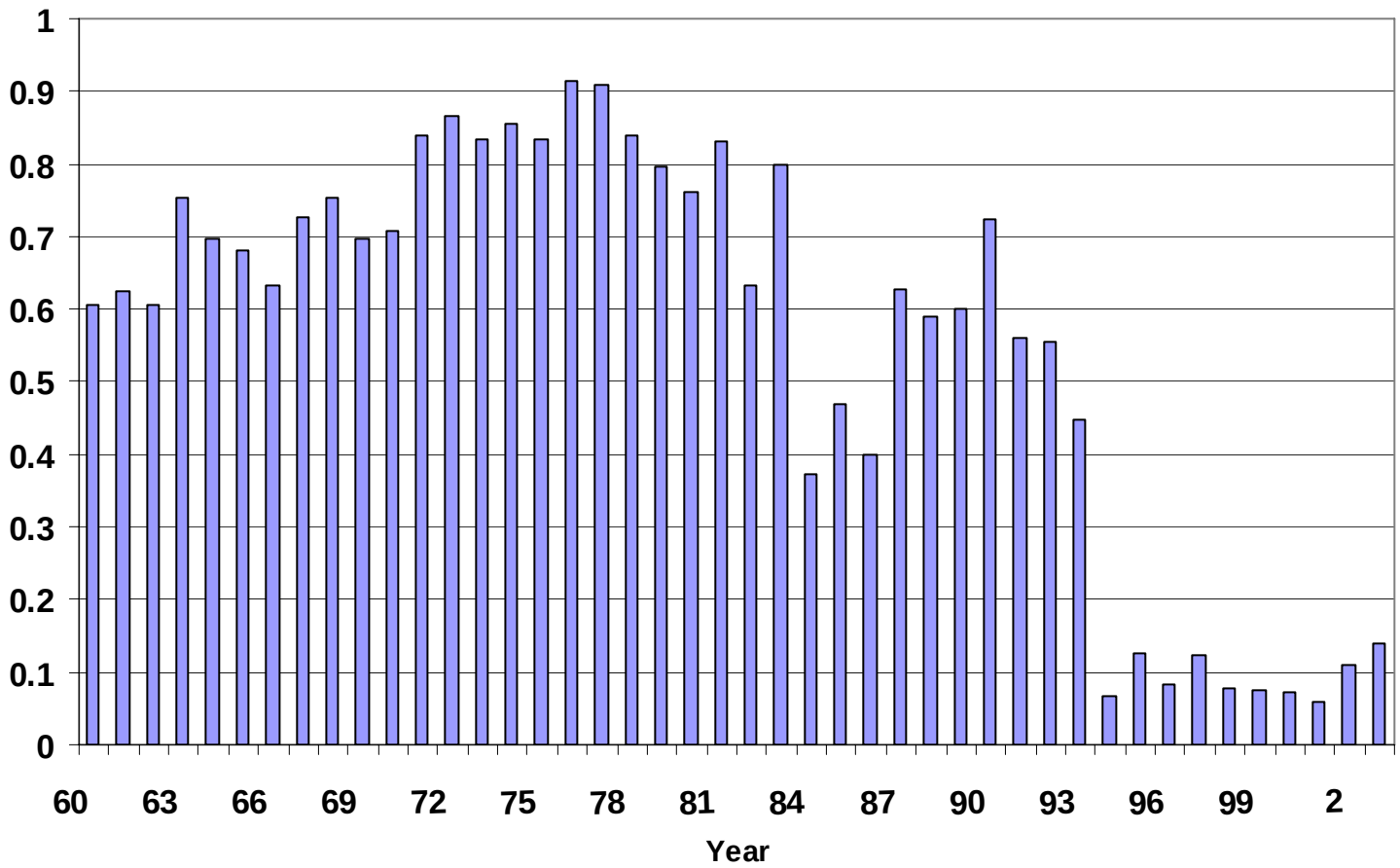
Nutrients-carcass placement

- Beneficial to have abundant natural spawners and to place salmonid carcasses.
  - Hatchery fish placed into selected tributaries
- Benefits may be limited compared to other habitat factors.
  - Productive streams without carcasses (Tenmile steelhead example)
  - Do not see increased juvenile production with higher spawner densities (Lobster Cr., coastal lakes example)
- Complexity important to retain nutrients from carcasses and other sources.
- Connectivity and good juvenile passage beneficial for fish to take advantage of seasonally productive areas.

Coho Harvest

- Reduced from historical levels.
- Amendment 13 used by PFMC and Oregon allows conservative harvest.
- Additional constraints in ocean due to listed coho from Lower Col. R. and S. Oregon-N. California.

Mid coast coho salmon harvest rate

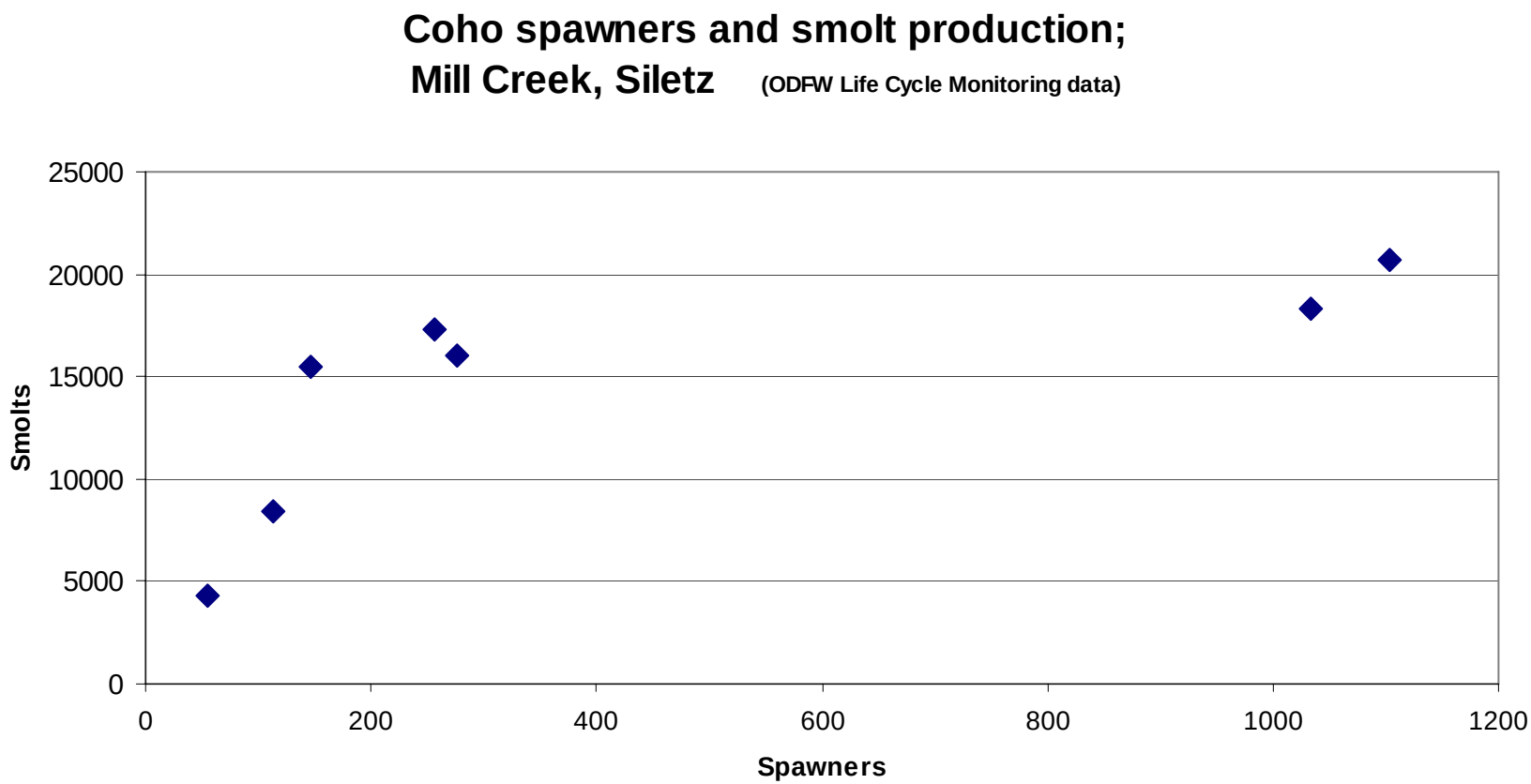


Good prospects for terminal sport harvest

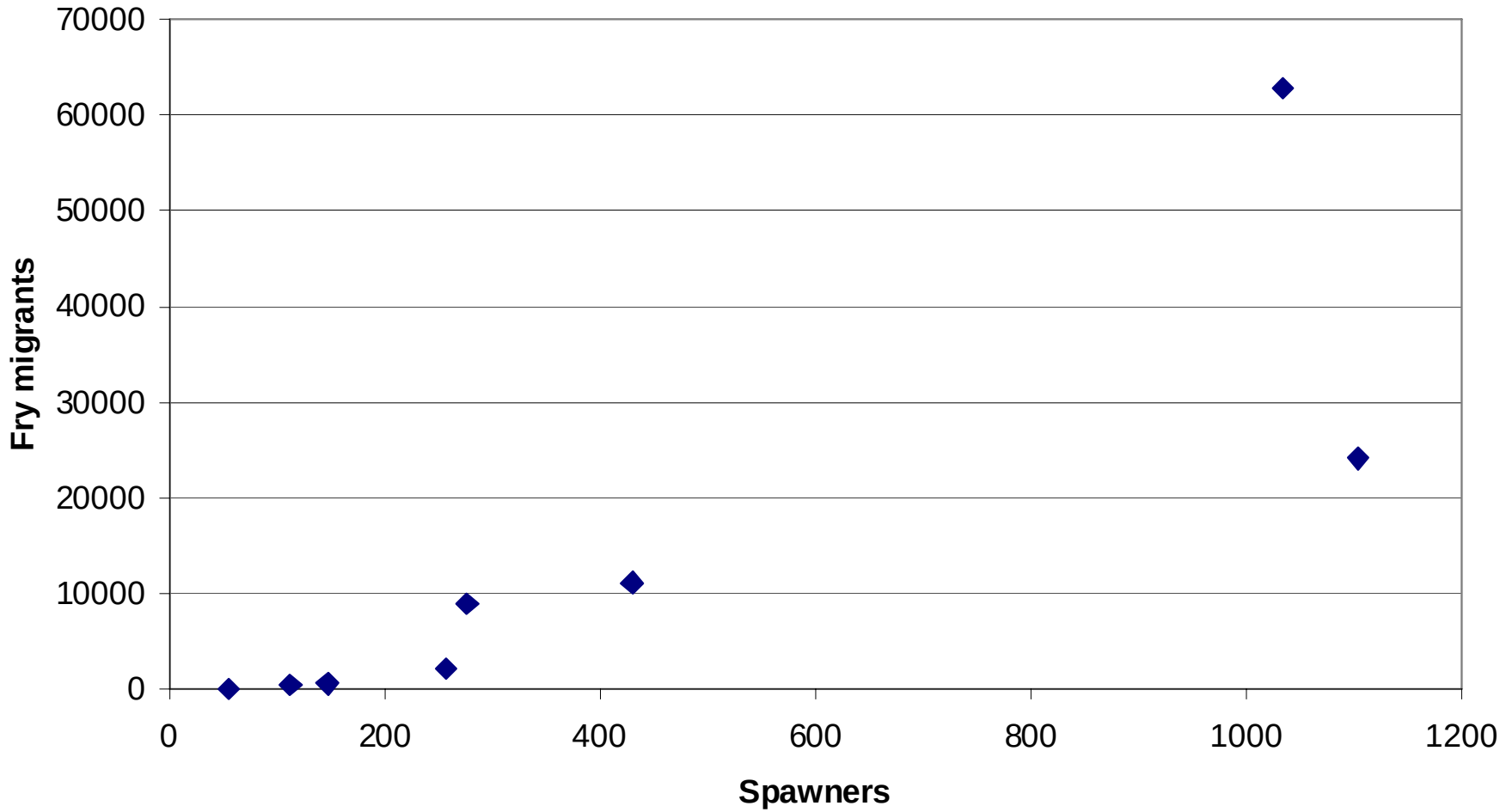
- Currently Siltcoos and Tahkenitch opened to limited wild coho harvest.
- Potential to open Siletz, Yaquina, Alsea and Siuslaw in moderate or good ocean conditions.
- Expect a ~10 % terminal harvest rate.
- Fisheries would be consistent with maximizing production and conservation.

Coho salmon seeding levels and carrying capacity

- Refer to two example graphs that follow.
- Spawners in excess of those needed for full smolt production in recent years.
  - Potential for limited harvest.
  - Increased smolt production dependent on improved habitat.


Coho spawners and smolt production;
Mill Creek, Siletz
(ODFW Life Cycle Monitoring data)
Smolts
25000
20000
15000
10000
5000
0
0
200
400
600
800
1000
1200
Spawners

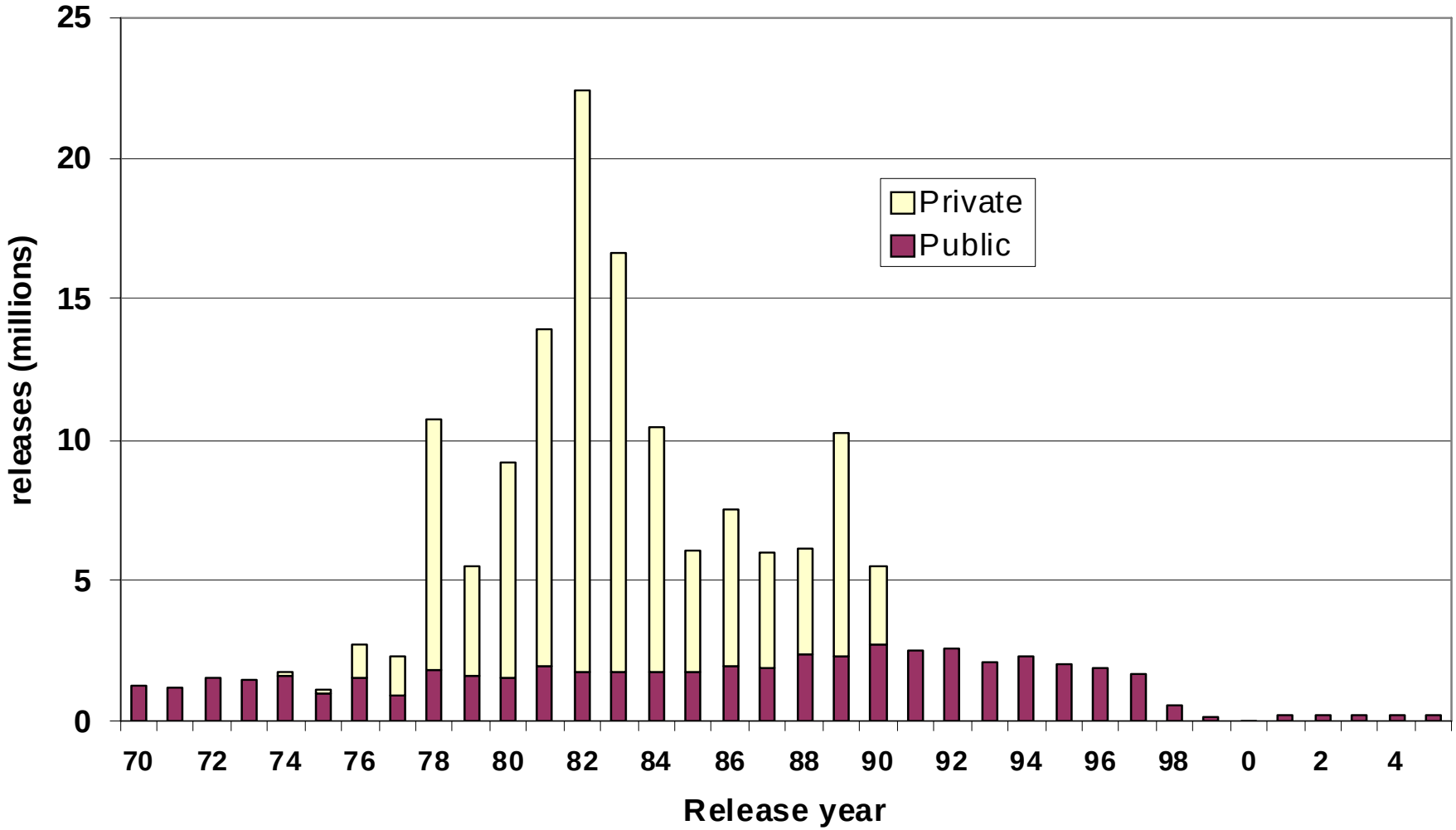
Coho spawners and fry migrants; Mill Creek, Siletz (ODFW Life Cycle monitoring data)



Hatcheries

- No longer a broad based risk factor.
- May have created density dependent suppression of smolt survival in the past.

Mid coast hatchery coho smolt releases

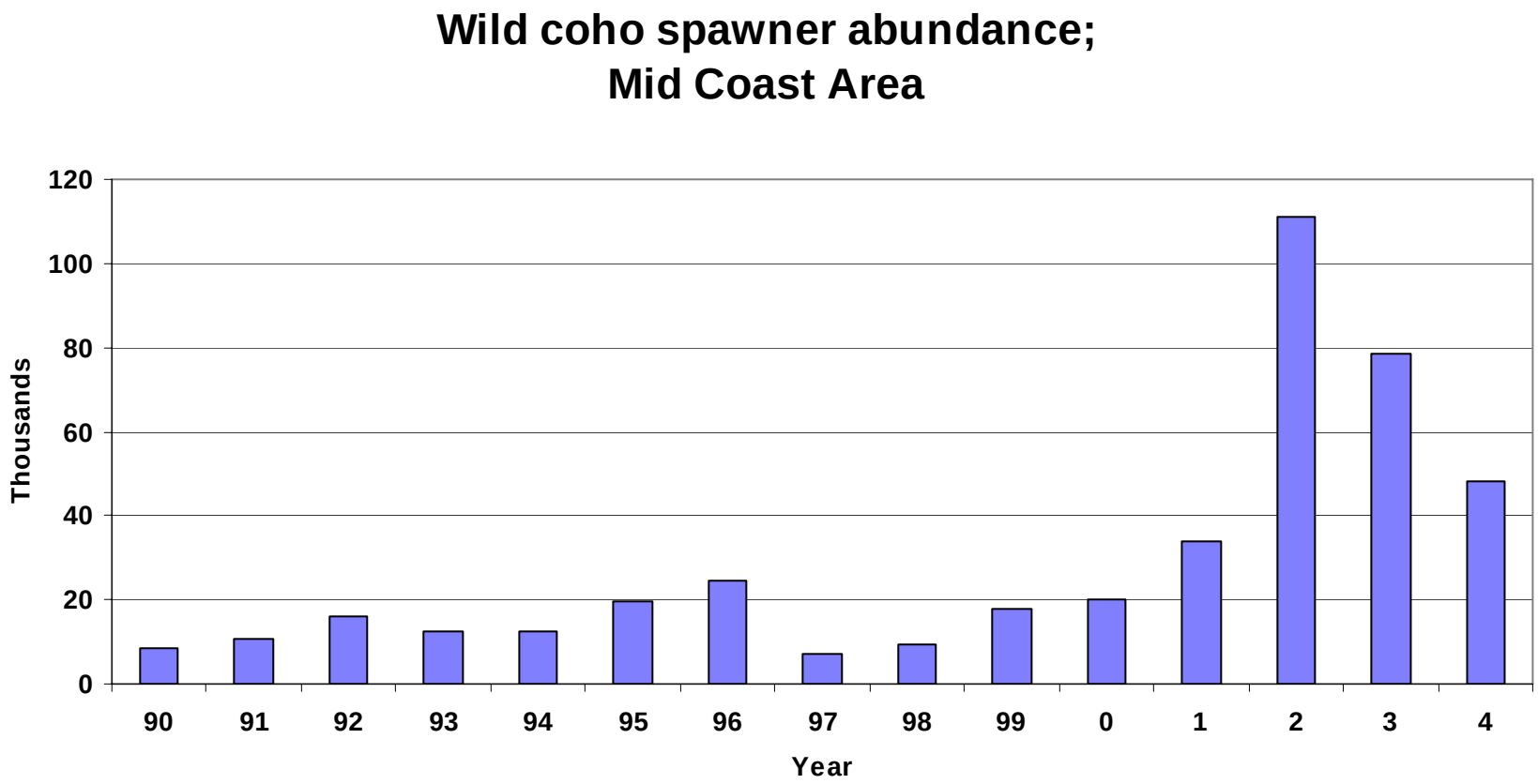


Hatchery Releases

- Only remaining smolt program is in Salmon River
- Hatchery releases identified as key limiting factor in Salmon River.
  - 4 % of Mid Coast coho miles
  - Poor habitat due to geology/low intrinsic potential
  - Wild population not viable in 1990's
- Options for Salmon R. Hatchery coho.
  - Use capacity for Col. R. (Youngs Bay)
  - Maintain, increase/decrease or end releases
  - Research value and options-only remaining mid coast hatchery smolt program.
  - Need input from local stakeholders.
- Recommend against hatchery coho smolt releases elsewhere unless for research.

Research Ideas

- Study the life history, habitat use and adult contribution of coho salmon juveniles that migrate out of tributary streams as fry in the spring and as fingerlings in the fall.
- Determine juvenile coho distribution and habitat use in coastal lakes.
- Better inventory and understanding of high intrinsic potential habitats.
- Better understanding of predator impacts, particularly marine mammals in estuaries.


Wild coho spawner abundance;
Mid Coast Area
Thousands
120
100
80
60
40
20
0
90
91
92
93
94
95
96
97
98
99
0
1
2
3
4
Year