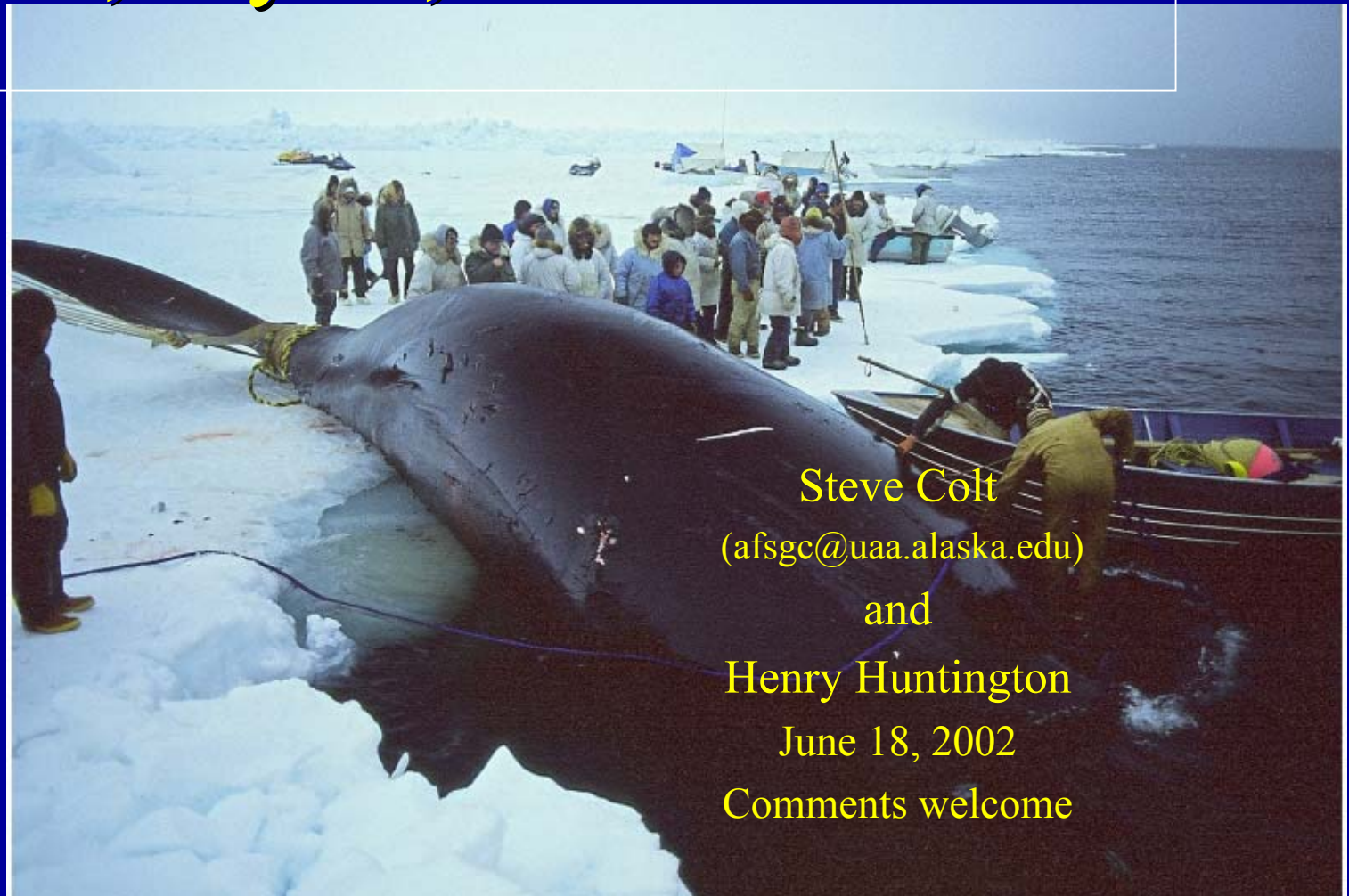


Oceans, Watersheds, and People: Facts, Myths, and Realities



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and

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June 18, 2002

Comments welcome

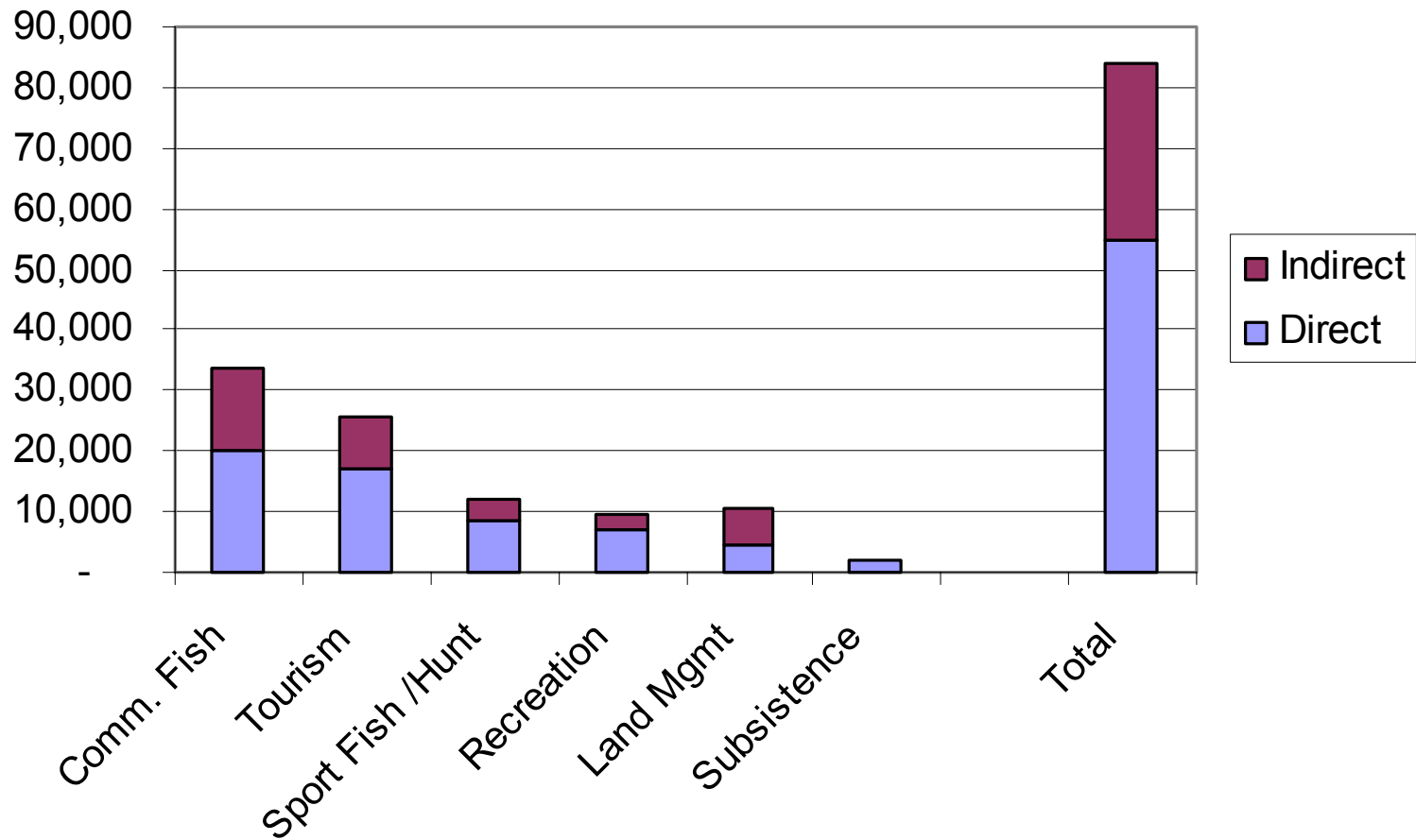
Our Talk

- Part 1: Great Expectations, or “How Alaskans use their oceans and watersheds”
- Part 2: Myths, or “Perception versus reality in assessing the state of human-ocean interactions”
- Part 3: A Challenge, or “Can we hope to manage all this?”

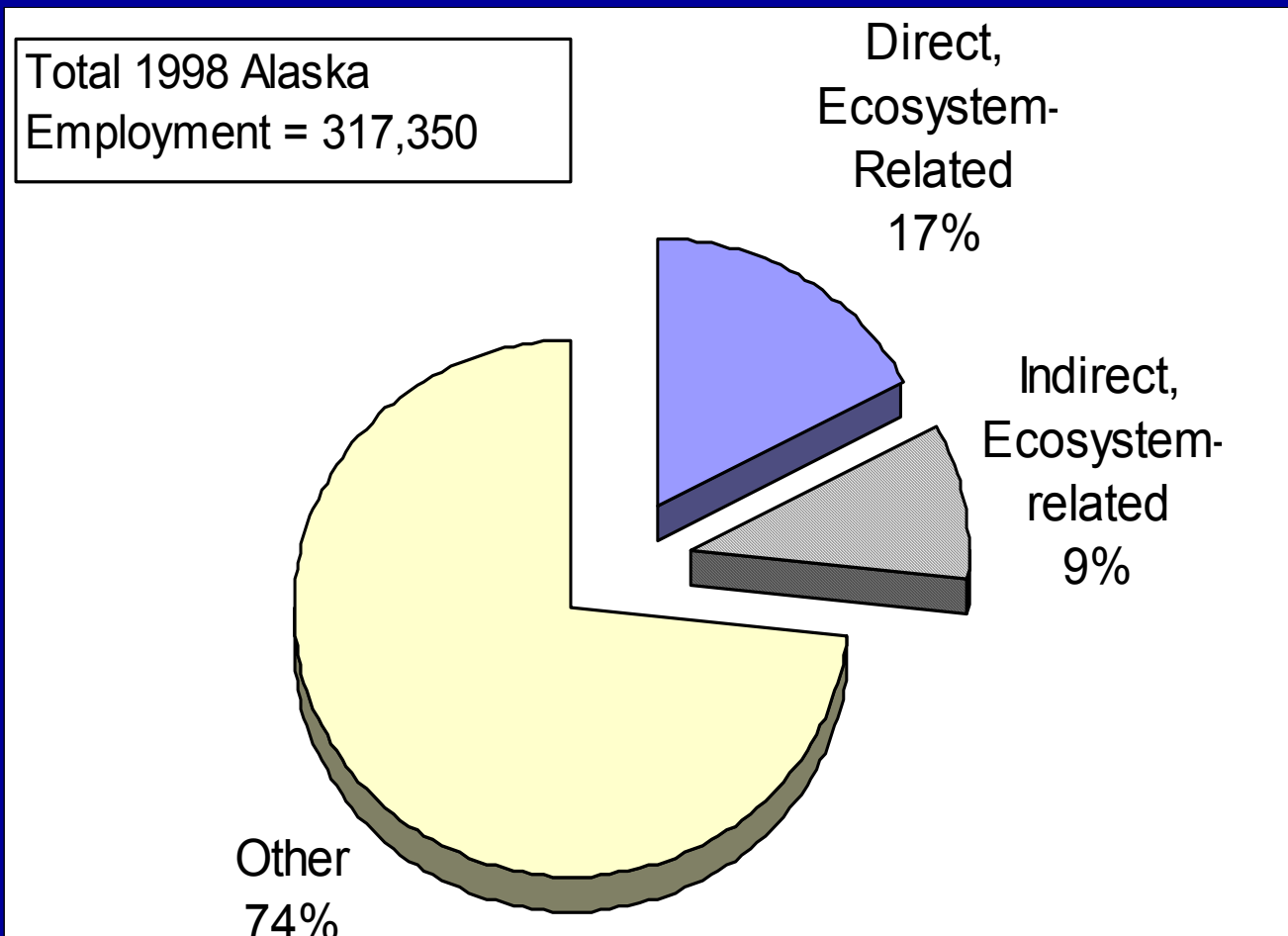
Part 1: Great Expectations

- Alaskans use their oceans and watersheds for many things
- Only one community – Anaktuvuk Pass – lacks access to anadromous fish
- Societal forces help determine how people respond to the ocean-watershed ecosystem

84,000 Alaska Jobs Depend on Healthy Ecosystems (circa 1998)



26% of all Alaska Jobs Depend on Healthy Ecosystems



Uses: Commercial Fishing

19,928 direct jobs

33,670 total jobs

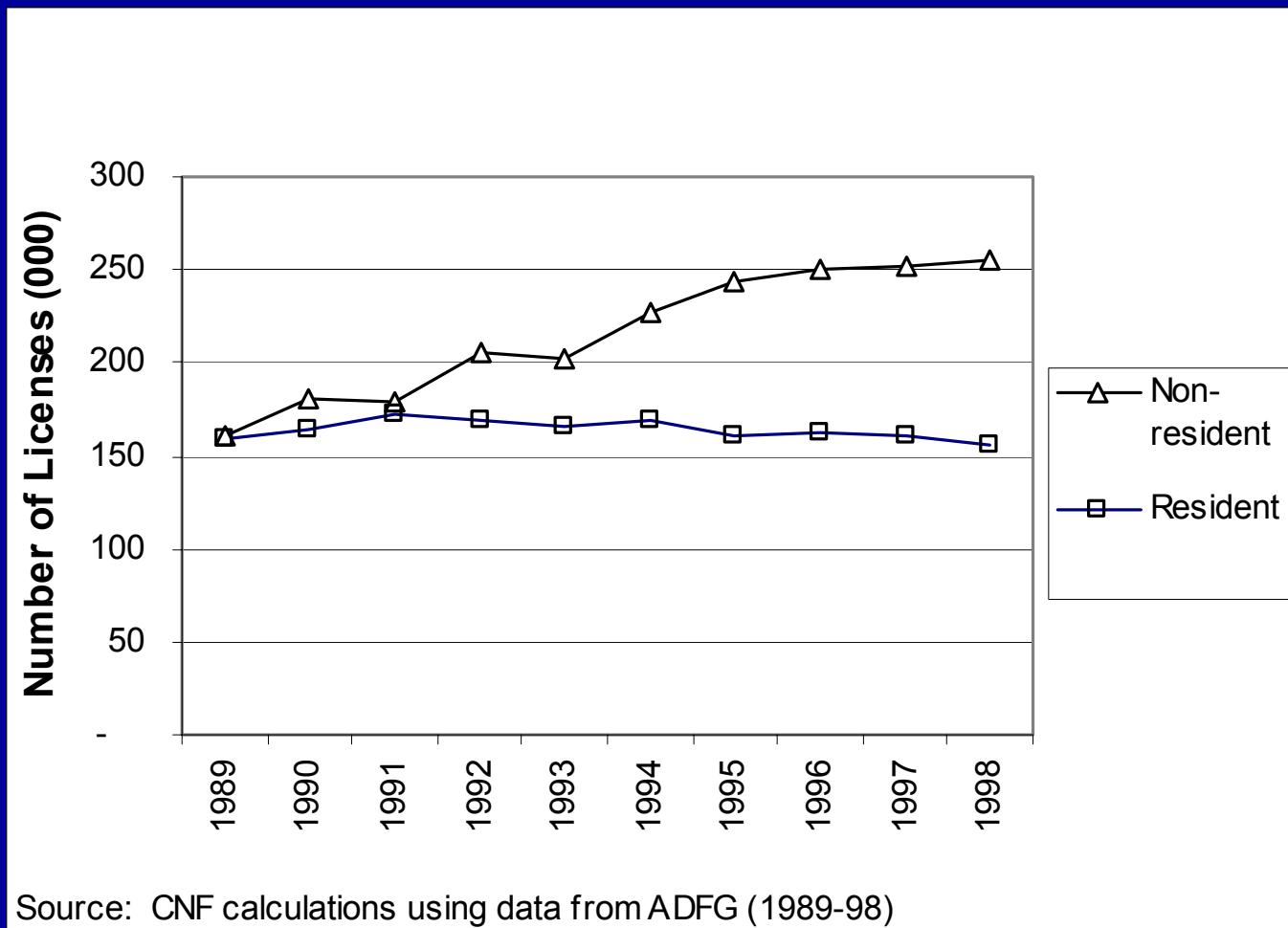
- Alaska produces over half the nation's domestic catch of fish
- Especially important in many coastal communities
- Allocations are contentious
- Environmental impacts may be significant



Uses: Sport Fishing

- One of the most popular uses of marine and anadromous resources
- One of four Alaska residents bought a license in 2001 – but resident use is flat
- Many tourists come to Alaska to fish
- 6,635 direct jobs ~ 9,236 total jobs

Nonresidents want Alaska Fish!





Uses: Subsistence

- Great cultural, spiritual, nutritional, and economic importance
- Hundreds of pounds per person per year in some villages
- Sharing networks extend throughout the state, spreading the benefits
- 2,000 direct cash economy jobs (providing inputs)

Uses: Tourism

16,871 direct jobs
25,512 total jobs



- Alaska's marine environment is a major attraction
- "Soft adventure" is fastest growing segment, but...
- Many residents dislike the associated impacts (e.g., helicopters)

Uses: Recreation

- Hard/impossible to measure - overlaps with tourism and sport fishing
- Important to many residents as a key benefit of living in Alaska (“permanent tourists”)
- The marine area is very popular

7,200 direct jobs

9,800 total jobs



Uses: Transportation

- Ease of shipping determines many city and village locations
- Most of Alaska's resources (oil, timber, minerals) are exported via the sea
- Accidents, such as the *Exxon Valdez*, are a threat to the marine environment



Uses: Offshore Development

- Oil and gas prospects are found all around Alaska
- Conflicts with commercial fishing have halted some leasing and exploration
- Offshore development does not depend on a healthy marine ecosystem

Part 2: Myths

- There are many accepted “truths” about the human-ocean relationship
- Facts often do not support these “truths”
- Continued reliance on the myths may impede effective management of our oceans and watersheds
- We provide five examples – there are others

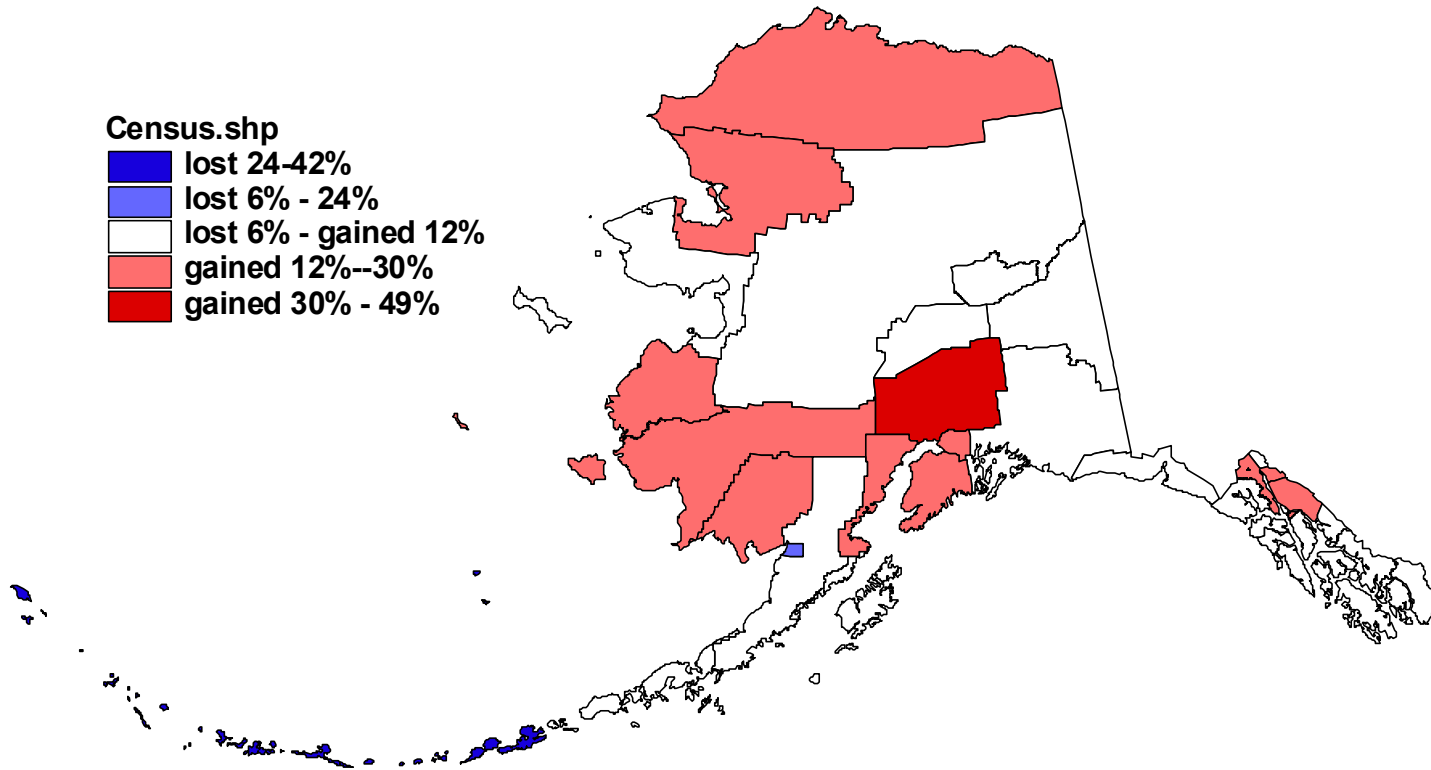
Myth 1: Alaska's social and economic health closely tracks changes in marine resource availability and world markets

- Great volatility in ecosystems and world markets in past decade
- Demographics are almost boring by comparison
- Are mid- and long-term changes greater?

Alaska Population Change 1990-2000

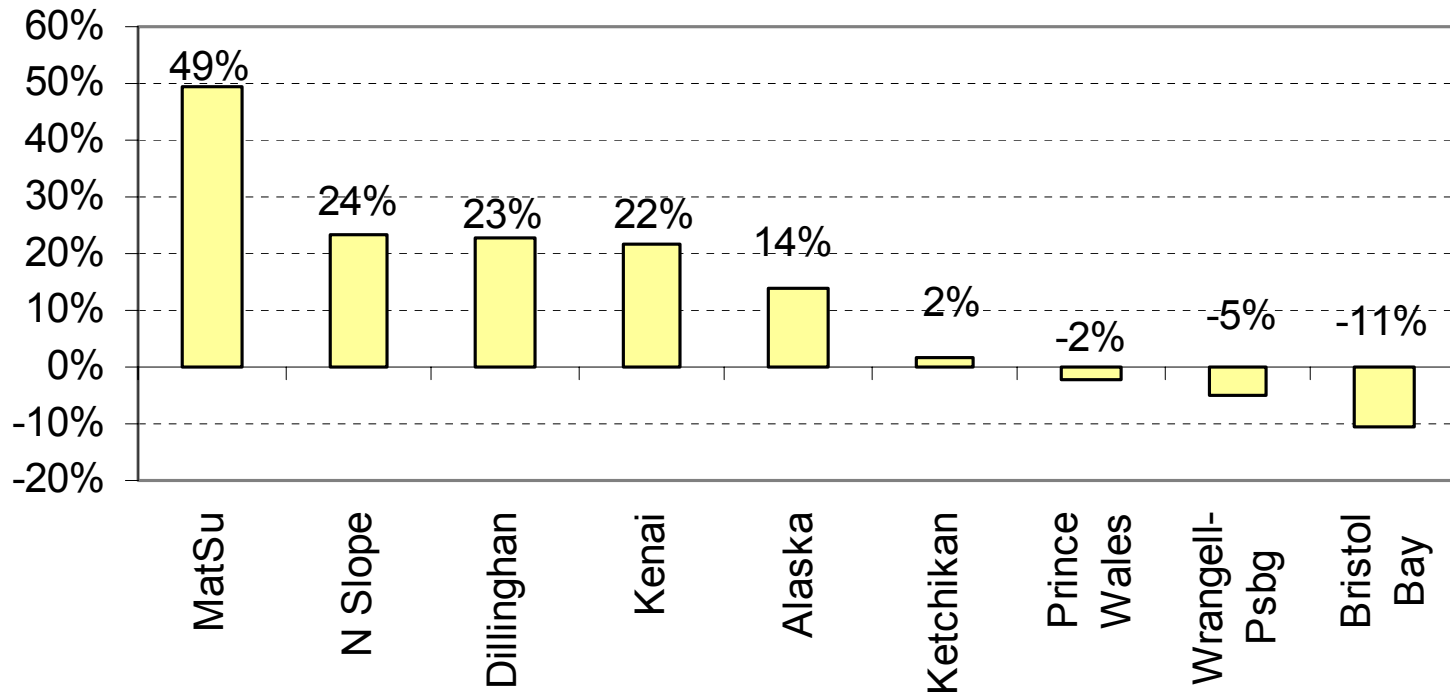
Census.shp

- lost 24-42%
- lost 6% - 24%
- lost 6% - gained 12%
- gained 12%--30%
- gained 30% - 49%



Fastest and Slowest Growing Areas

**Total Population Change 1990-2000:
Census Areas**

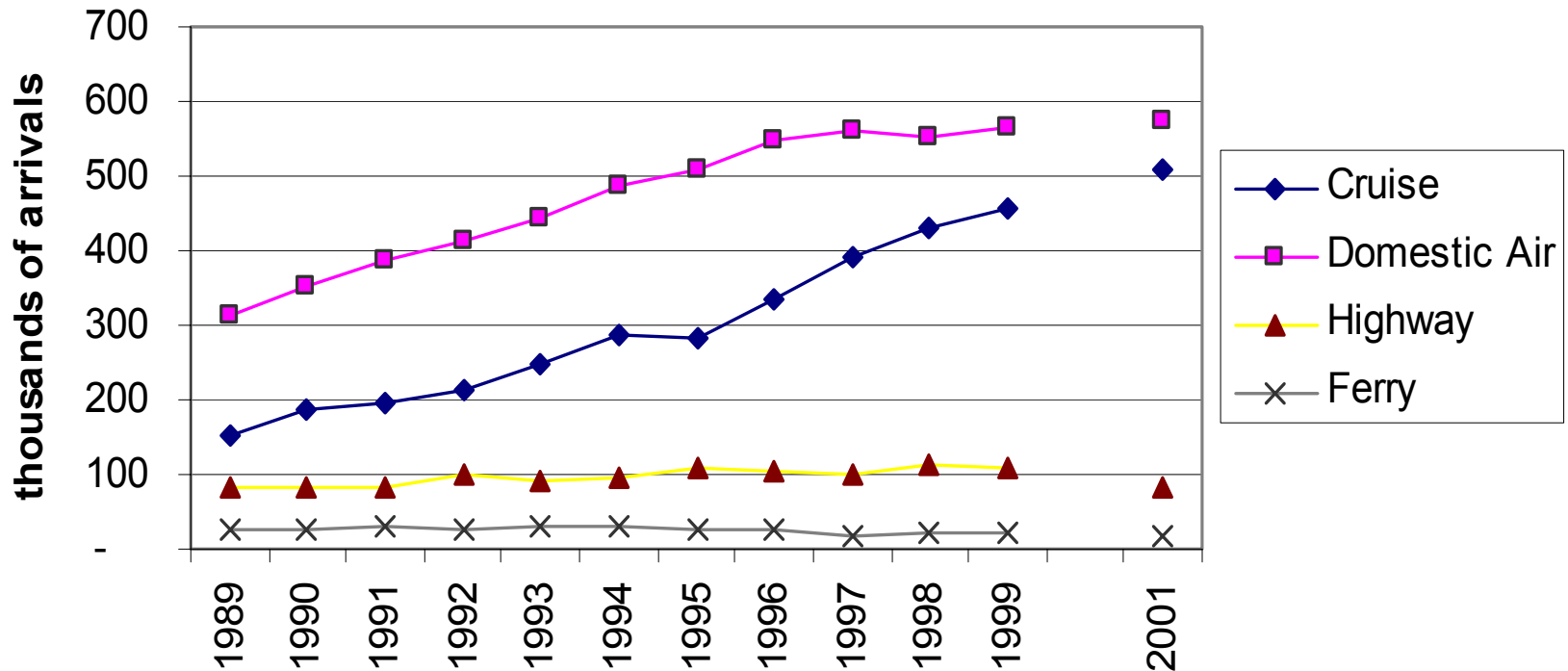


Myth 2: Tourism is “the next big thing” for Alaska’s economy

- Growth is slower: Summer arrivals grew at 7% per year 1989-98 but only 1.1%/yr 1998-2001
- What are tourists after, and how much can we provide?
- How important is a healthy marine ecosystem for tourism?
- How much economy can tourism actually support?
- Can eco- and cultural tourism really help rural economies?

Tourism Growth has Slowed

Summer Visitor Arrivals 1989-2001
(May - September)



Myth 3: Rapidly increasing human use is stressing the marine ecosystem

- Many Coastal populations are “flat”
- Use patterns are shifting
 - Fishing flat, timber declining, tourism footprint is expanding, “quality of life industry” is growing
- Conflicts among uses are increasing
 - E.g., mariculture vs. ecotourism
 - Or, sport vs. commercial fishing

Overall Population Growth is Slow

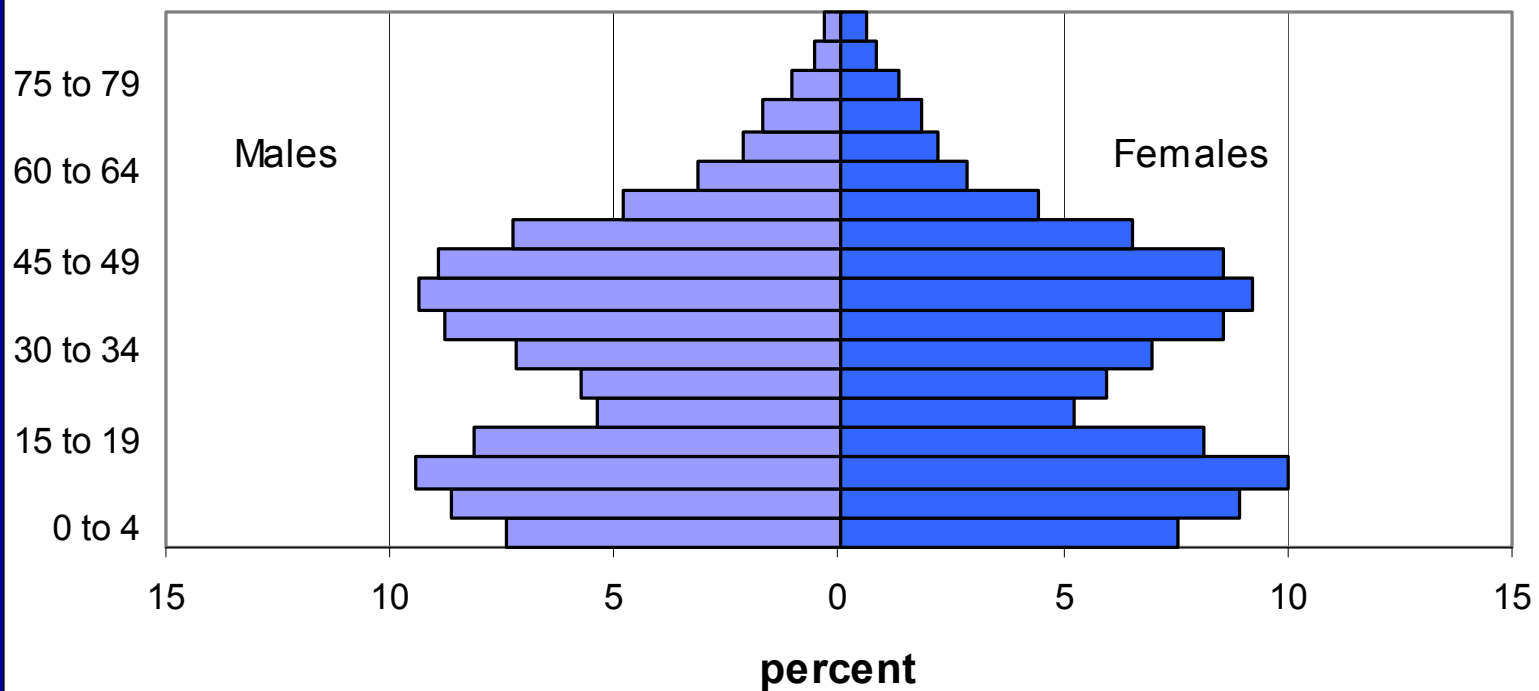
Alaska	1.3 % per year
Anchorage	1.4 % per year
Mat Su	4.1 % per year
Kodiak Island	0.4% per year
Ketchikan Borough	0.2% per year
Aleutians West	- 5.4% per year

But, some places show rapid change

Big Lake	6.0 % per year
Haines	4.2 % per year
Selawik	2.9 % per year
Ketchikan City	- 0.4% per year
St. Paul	- 3.4% per year

And, a population pulse is coming

Population Pyramid Coastal 2000



Myth 4: Alaska is different and lessons from elsewhere do not apply

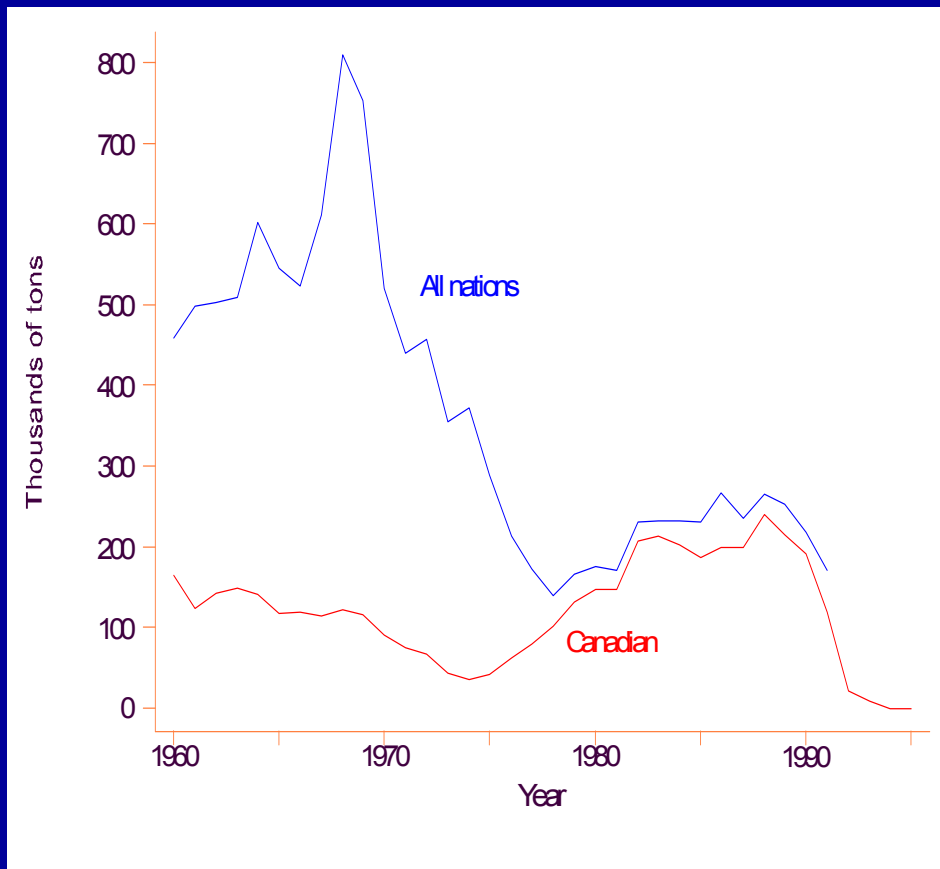
- Alaska is remote, sparsely populated
- But other northern regions are, too
 - Nunavut, Greenland are much less populated
- Ecosystems do not reflect the idiosyncrasies of their human neighbors
- Ecosystems may not notice who the user is

Words of Wisdom

“The legislature passes game laws, and nobody pays any attention to them after they are passed. Why? Because we insist on considering wild animals as our remote forefathers considered them, when men were scarce and wild animals were plenty.”

--Commissioners of Fisheries of Massachusetts, 1868

Caution from the Atlantic



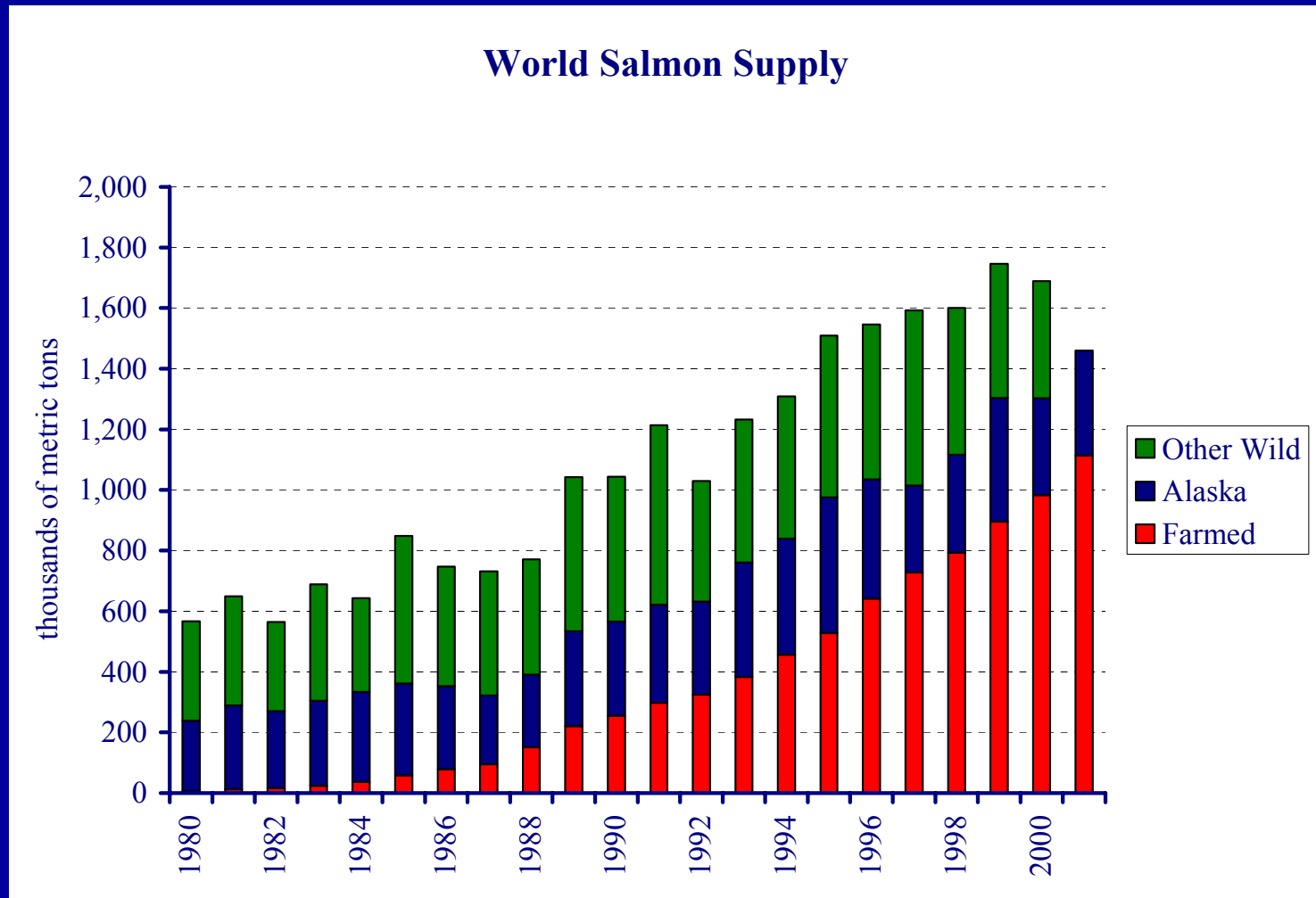
- Newfoundland cod crashed despite protectionism
- Catches were stable for a decade prior to the crash

(Haedrich and Hamilton 2000)

Caution from the Salmon industry

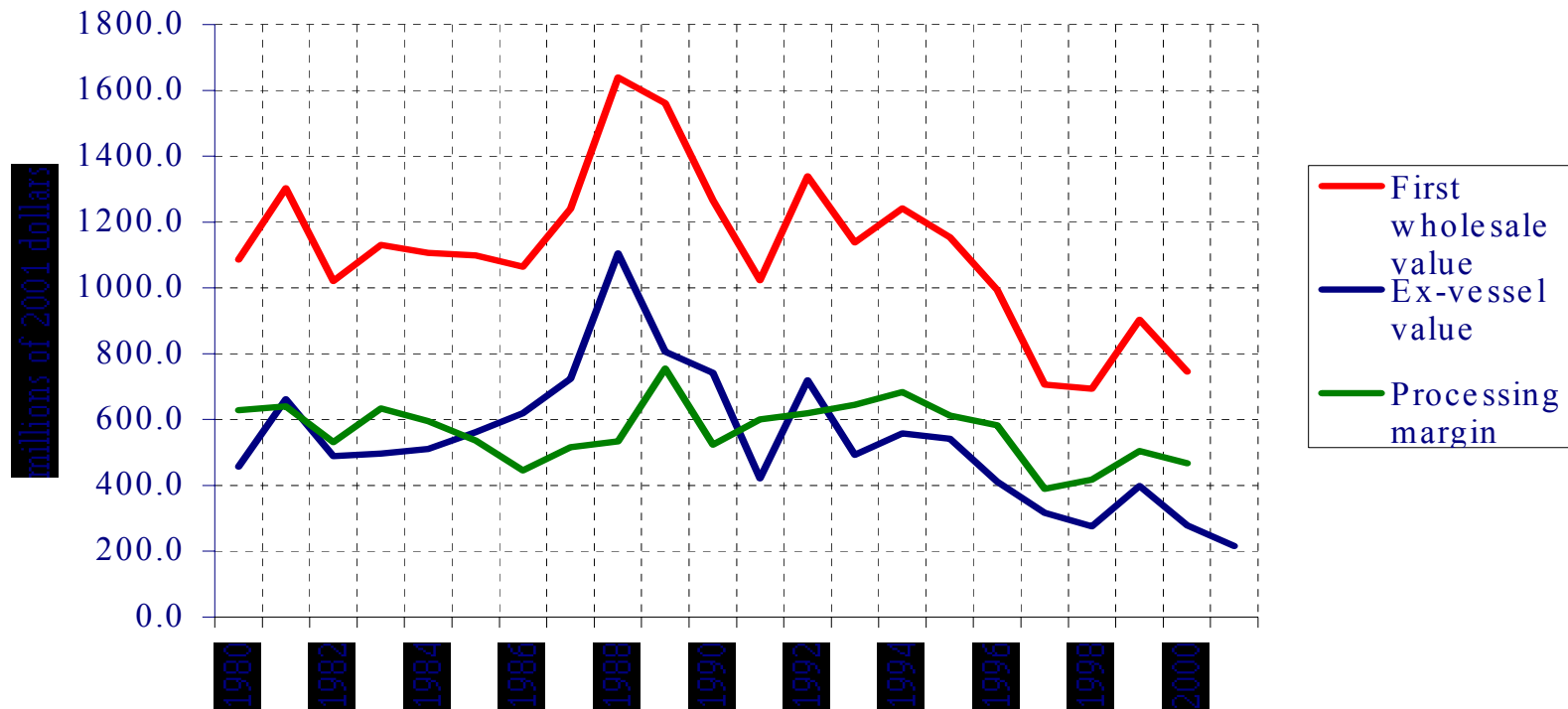
- Farmed salmon are more than half of world supply
- Alaska volume may be going up, but world price is going down
- We don't live in an economic vacuum
- Traditional extractive industries cannot grow the economy forever (max out ecosystem or the economy generates substitutes)

Farmed Salmon dominates world markets



Value of Alaska salmon is down

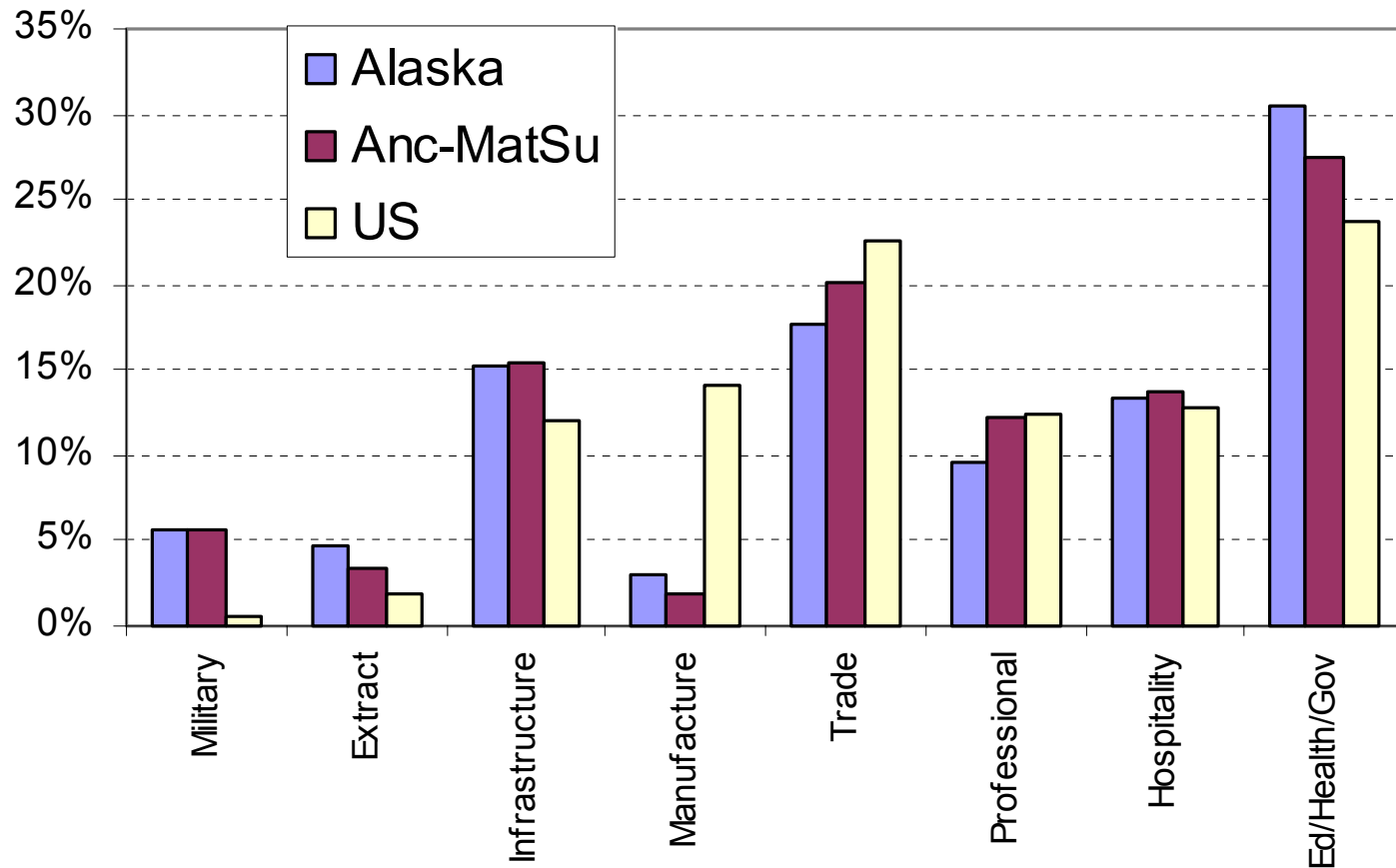
Wholesale Value, Ex-Vessel Value, & Processing Margin
After Adjusting for Inflation: All Alaska Salmon



Note: "Processing Margin" = First Wholesale Value - Ex Vessel Value

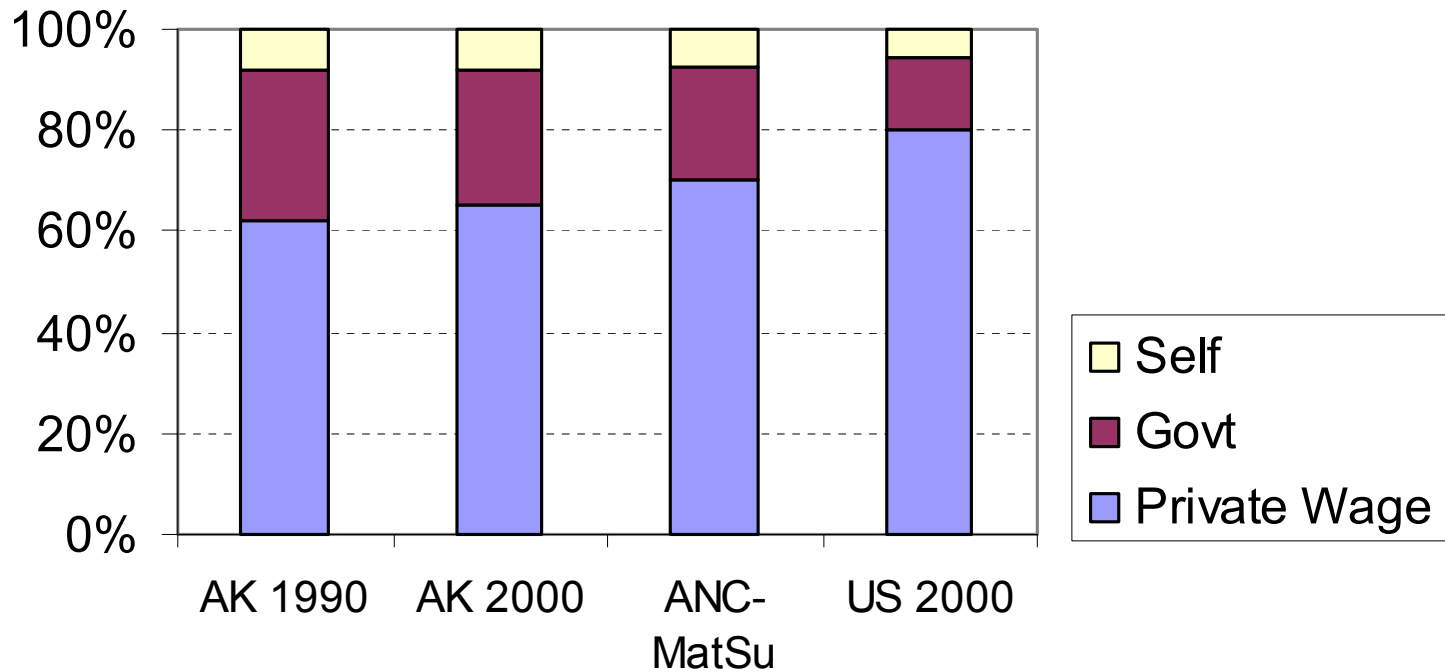
AK Economy looks like US

Employment Mix by Industry (2000)



Alaska looks more like US over time

**Employment Mix by
Census Class of Worker**



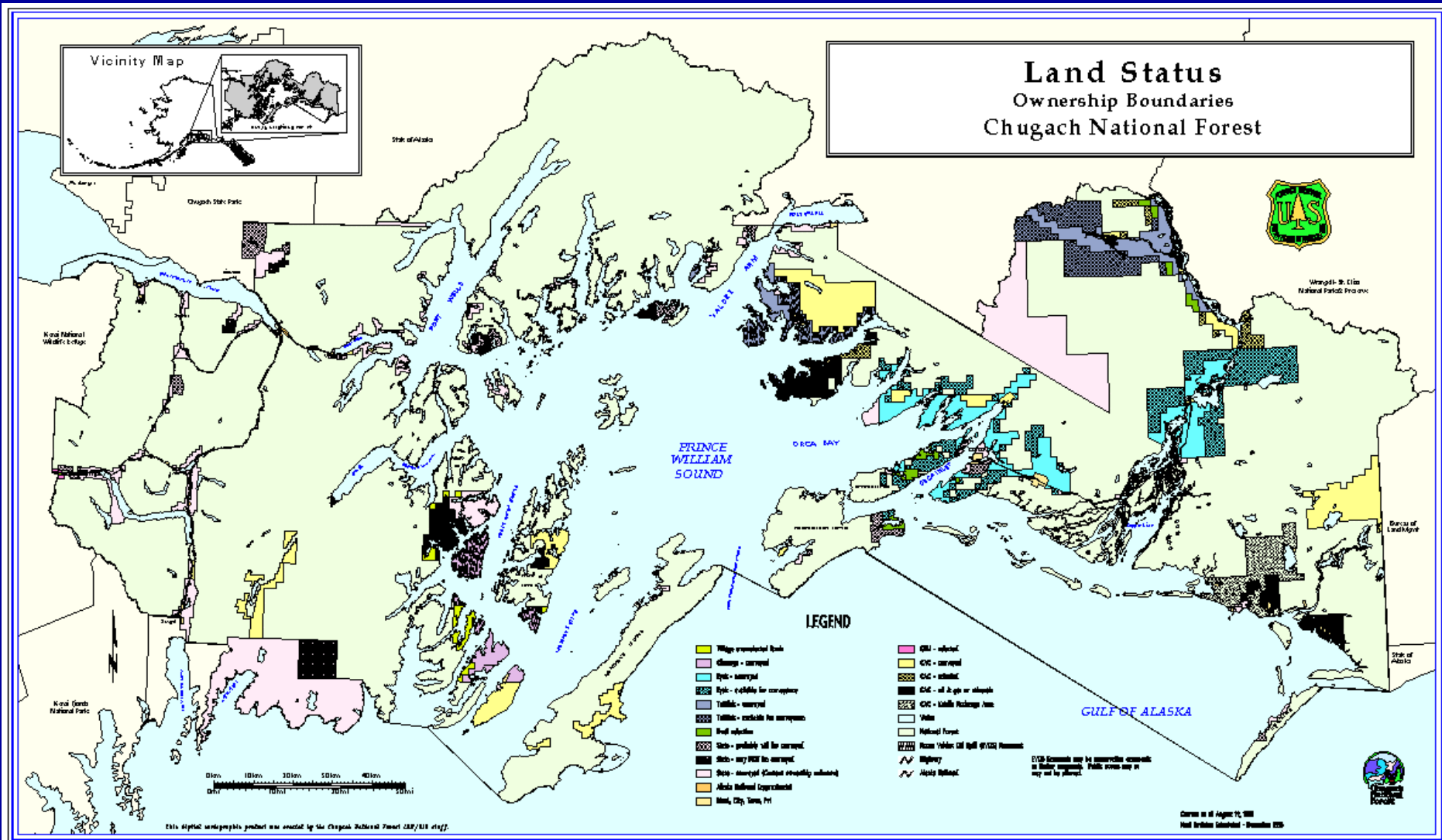
per capita income is down from 1990 to 2000

Alaska	-2% (total change)
Anchorage	-1%
Mat Su Borough	+2%
Rest of coastal AK	-5%
Kodiak Island	-15%
Ketchikan Borough	-2%

Myth 5: Alaska's coastline is protected from, or inaccessible to, development

- Much of the coastline is in protected areas, and much is remote
- But, distance has not hindered past development when it paid
 - Nome was AK's largest city at 1900 census
- And, access is improving and often cannot be controlled (e.g., boats in PWS)
- Use is becoming more “extensive” (mariculture, helicopter tourism)

Prince William Sound: Land of Many Managers



Part 3: A Challenge for Society

- Human uses growing, due to bigger footprint, not simply more people
- Conflicts over allocation and management priority are substantial and increasing
- The health of Alaska's oceans and watersheds is important to the state's residents
- So, . . .

Fact or Fiction?

“The current management system provides for a healthy ecosystem...



...and a healthy economy”

Ecosystem Questions

- Are we approaching any stress thresholds in the ecosystem?
- Can we really sustain a “maximum yield” given volatility and uncertainty?
- How do we assess cumulative impacts?
- Can a fragmented management system address the major threats faced by our oceans and watersheds?

Economy Questions

- Healthy economy for WHOM?
- What is the role of marine resource management in achieving socioeconomic goals such as stable rural communities?
- How can our oceans and watersheds best be managed for Alaska's short-, medium-, and long-term economic health?

Limits and Allocations

- Do allocation battles pressure us to ignore the limits of the ecosystem? Or,
- Do we recognize that there is not or may not be “enough for everybody”?
- How can we meet our many demands on the finite resources of our oceans and watersheds?



~The End~

Download this show and the
paper to follow from:
www.iser.uaa.alaska.edu

link to the “resources and
environment” research area

Addendum: Employment Figures

	Direct	Total
Comm. Fishing	19,928	33,670
Tourism	16,871	25,512
Sport Fish/Hunt	8,800	12,200
Land Mgmt	4,534	10,475
Resident Recreation	7,200	9,800
Subsistence	1,980	1,980
Adjust for doublecount	(4,356)	(9,450)
TOTAL	55,000	84,200