



ISER

1997-2000

Review

University of Alaska Anchorage • July 2000

The Institute of Social and Economic Research has studied public policy in Alaska since 1961. This Review summarizes some of our recent research. To learn more, get in touch with us (see contact information at bottom of page).

Jobs and income in Alaska will likely grow at just over 1 percent annually in the next decade (pages 2 and 3). Alaska's gross state product dropped in 1998, mostly because of low oil prices (page 12).

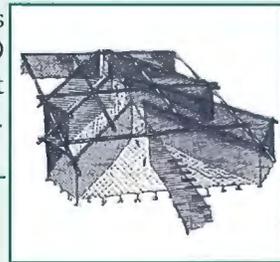


Nearly half of Alaskans still don't wear seatbelts, despite laws that have been in place since the 1980s (page 7).



Half the utilities in 190 small rural places might have gone bankrupt, if not for the new state endowment fund to subsidize electricity costs (pages 4 and 5).

The salmon traps Alaskans hated and banned after 1959 weren't as profitable as most people believed (pages 8 and 9).



Native communities that controlled alcohol may have saved 20 percent of the people who would otherwise have died violently in recent years (page 6).



Taking classes outside the classroom is an option Americans are choosing in growing numbers. For a snapshot of distance education at the University of Alaska, see page 10.

Web sites bring a wide range of ISER reports and projects online. See page 11 for addresses and descriptions.



LOOKING AHEAD: ALASKA'S POPULATION AND ECONOMY

Source: *Economic Projections for Alaska and the Southern Railbelt, 1999-2025*, by Scott Goldsmith, July 1999

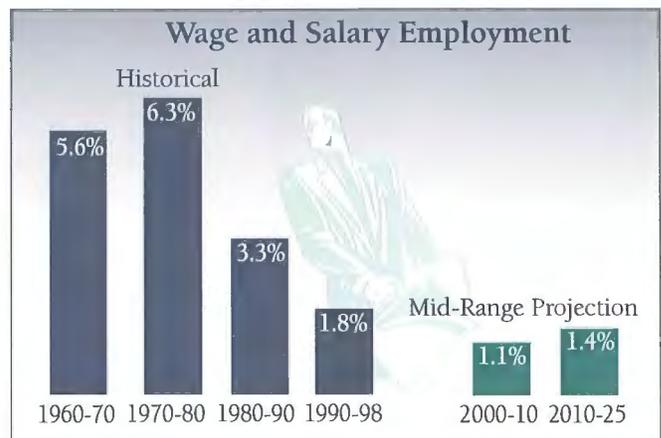
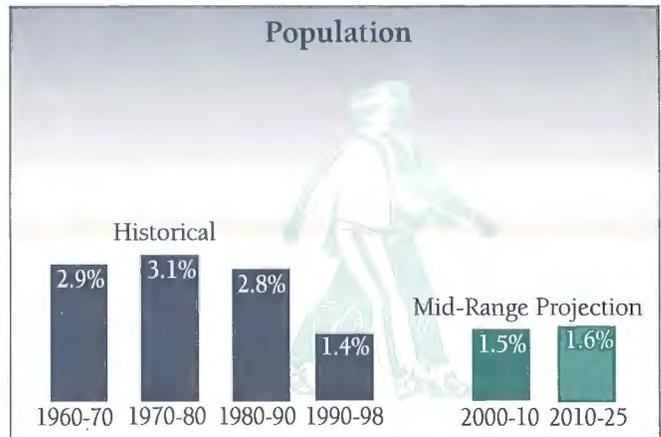
Prepared for Chugach Electric Association

Alaska's population more than doubled and the number of jobs quadrupled during the first 30 years after Alaska became a state. About half that growth resulted in one way or another from development of the huge North Slope oil fields—in particular, from the state government spending its billion-dollar oil revenues. And because the petroleum industry is so volatile, growth from 1960-1990 wasn't smooth but rather was punctuated by a number of booms and busts.

In the 1990s, growth slowed as petroleum income dropped, bringing down state oil income. What about the coming years? The adjacent figures show the most likely levels of growth over the next 25 years, based on what we know today. But the future always holds surprises, and the full report cited above looks at a range of potential growth.

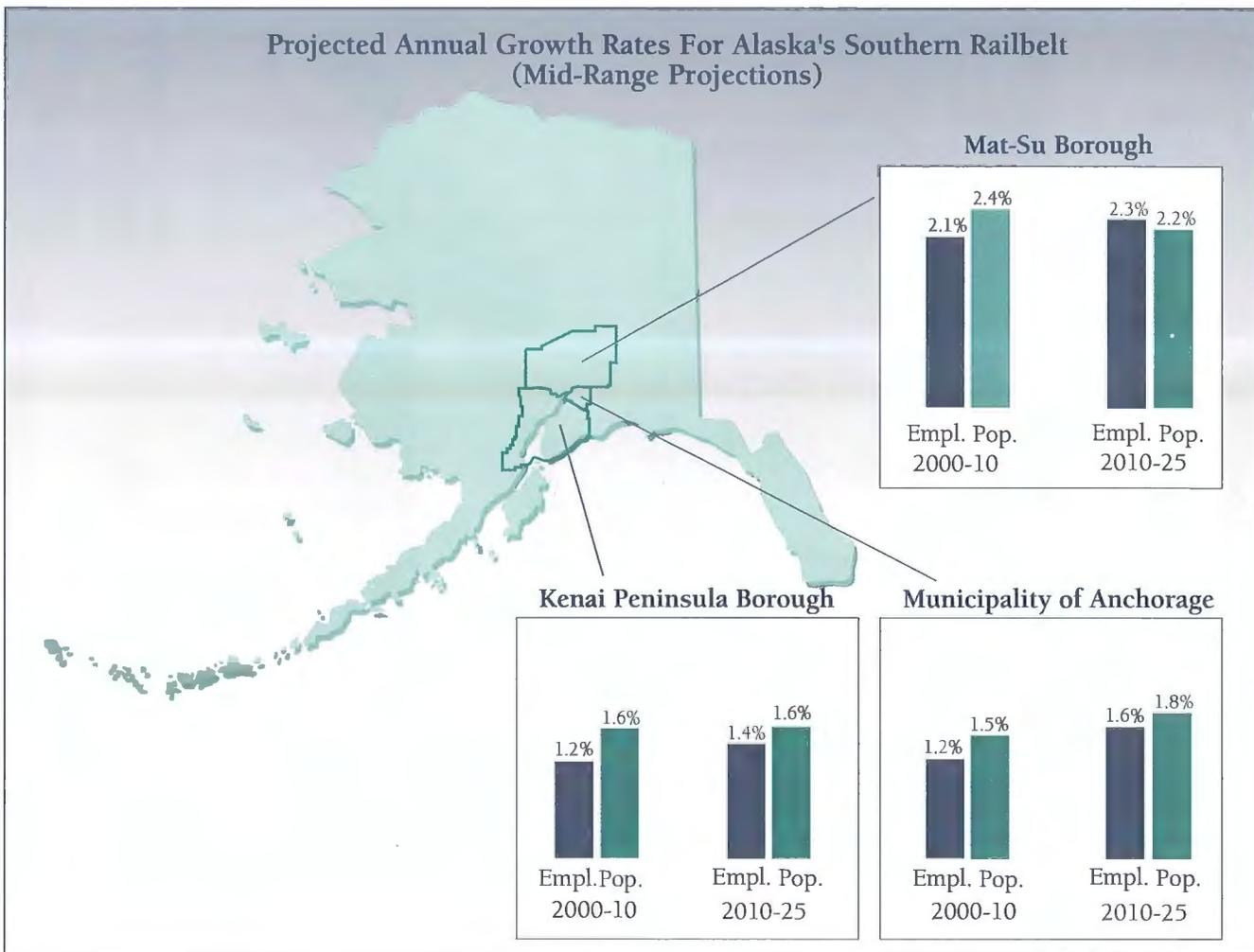
- *Population growth in the next 25 years will likely be close to the rate of the 1990s*—about 1.5 percent on an annual average between now and 2010 and just slightly higher in the following 15 years. Population is expected to grow somewhat faster than employment because (1) as Alaska's population ages, a larger share of residents will be out of the work force; and (2) residents will take more of the jobs that historically went to non-residents.
- *Employment growth in the future will likely be much slower than in the past*—about 1.1 percent annually in the coming decade, as the economy adjusts to reduced oil production and to reduced state oil income. Most of the new jobs will be in support industries (those that provide goods and services to Alaskans), but continuing growth in the tourism, mining, and air cargo industries will also add jobs.
- *Real (adjusted for inflation) personal income of Alaskans will likely grow about 1.4 percent annually* in the coming decade and around 1.9 percent annually after that. That's higher growth than in the 1990s but still far less than in earlier decades. In recent years, more of the new jobs have been in lower-paying service industries rather than in petroleum, construction, and other higher-paying industries that used to contribute a bigger share of jobs. That trend toward more service jobs is expected to continue. But personal income of Alaskans will get a boost as income from sources other than wages (pensions, for instance) continues to grow.

Annual Average Growth Rates for Alaska Population, Employment, and Income



*Adjusted for inflation

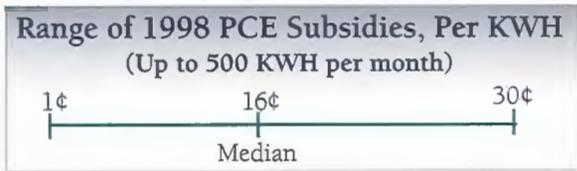
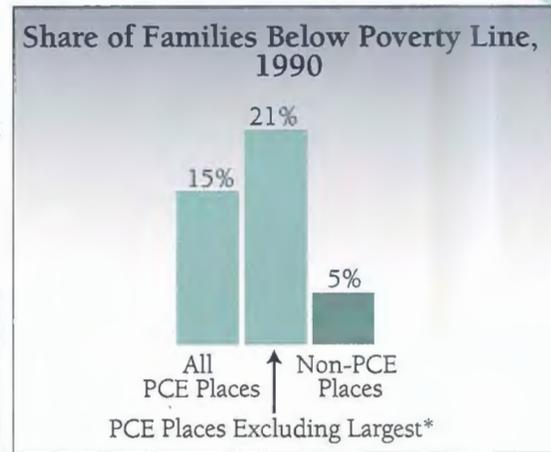
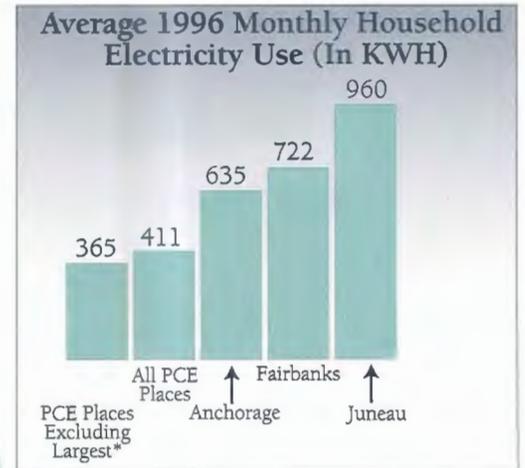
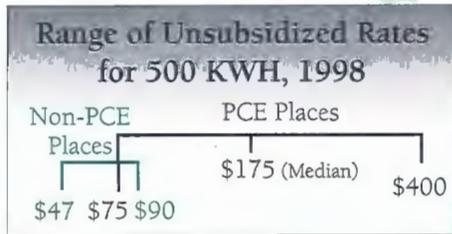
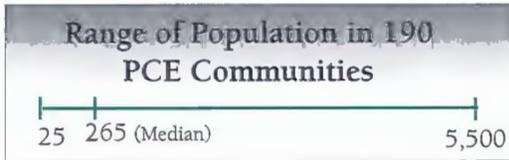
Projected Annual Growth Rates For Alaska's Southern Railbelt (Mid-Range Projections)



Alaska's railbelt runs from Seward on the Kenai Peninsula to Fairbanks in the Interior. About 60 percent of Alaskans live in the southern railbelt region, which includes the Kenai Peninsula, the Municipality of Anchorage, and the Mat-Su Borough (as shown in the map above). Past economic growth was concentrated in those areas, as future growth will be.

- Growth in Anchorage will largely parallel growth statewide.* Anchorage makes up a big share of the state economy, has the most diversified economic base, and is the center of support services for businesses and households throughout much of the state. Anchorage's population has nearly tripled since 1960, and its economy has expanded to replace Seattle as the supply center for much of Alaska. Development anywhere in Alaska usually affects Anchorage in some way. Trade, finance, service, transportation, and construction industries are concentrated in Anchorage, as are state and federal government jobs.
- The Mat-Su Borough's population and employment are likely to grow at more than 2 percent annually in the coming years.* That area's economy is closely tied to Anchorage's, but both growth and decline are more pronounced in the borough, because it is on the periphery of the larger Anchorage economy. Two thirds of the Mat-Su's economic base is provided by residents who commute to work in Anchorage or other areas of the state. Mining, timber, tourism, and agriculture also contribute to the borough's economy.
- In the Kenai Peninsula Borough, the number of jobs will likely grow at around 1.2 percent annually in the coming decade and a bit faster in the following years.* That employment growth more or less mirrors growth statewide. The borough has a fairly diversified economy, with its major industries being petroleum, fishing, and tourism. Like the Mat-Su Borough, the Kenai Peninsula relies on Anchorage for many support services. But residents of the Kenai Peninsula don't drive to Anchorage daily to work; it's a much further drive than between Anchorage and the Mat-Su Borough.

What Do Power Cost Equalization (PCE) Communities Look Like?



*Based on 1996 electricity sales; excludes 11 communities with populations of roughly 1,000 to 5,000.

WHAT IS THE POWER COST EQUALIZATION PROGRAM—AND WHAT WOULD HAPPEN WITHOUT IT?

Source: *The Economic Significance of the Power Cost Equalization Program*, by Scott Goldsmith, November 1998

Prepared for Power Cost Equalization Blue Ribbon Panel

The Power Cost Equalization (PCE) program was threatened with elimination at the end of the 1990s, because its money was running out. PCE is a state program that subsidizes part of the cost of electricity in about 190 small rural places in Alaska.

The program cost \$16 million in fiscal 2000, paying from 1¢ to 30¢ per kilowatt hour for the first 500 kilowatt hours of electricity for residential customers and some community facilities.

The 1999-2000 Alaska Legislature saved the program by creating a new \$187 million endowment fund. Before that fund was created, the governor had established the Power Cost Equalization Blue Ribbon Panel to suggest permanent ways of funding the program. The panel in turn contracted with ISER to examine the program's economic significance.

The map on the facing page and the adjacent figure provide a snapshot of the characteristics of PCE communities and of the likely consequences if the PCE program had been eliminated.

Why PCE?

The rationale for the program, which was created in the 1980s, is that rural places need affordable electricity to survive and grow. A second reason proponents of the program often cite is equity: in the 1980s the state government paid to build dams that provide cheaper electricity to some areas of southeast and southcentral Alaska.

The same amount of electricity that costs \$50 in Anchorage or Juneau can cost \$150 to \$300—or more—in remote places. Three things contribute to high costs of electricity in rural communities:

- **Expensive fuel oil**, which most rural places have to rely on to generate power—unlike many larger towns, which have access to cheaper natural gas, coal, or hydropower.
- **Remote location**, which means that the fuel is even more expensive when it gets to the community.

What Would Happen Without PCE Program? ^a		
Effects on Rates and Use		
	Average, All PCE Places	Average, Excluding Largest PCE Places ^b
Residential Rates	↑ Up 80%	↑ Up 107%
Residential Use	↓ Down 18%-31%	↓ Down 24%-42%
Effect on Utilities <ul style="list-style-type: none"> • Half the utilities in PCE places might not survive the downward spiral of rising rates, fixed costs, and falling use. 		
Economic Effects <ul style="list-style-type: none"> • Rural residents would face about \$11.5 million more in higher electric bills, higher costs for community facilities, and associated costs. • About 210 jobs and \$5 million in wages statewide would be lost. • Half or more of lost jobs and wages would be in urban areas. 		
Other Potential Effects <ul style="list-style-type: none"> • Threat to health and safety of rural residents who rely on electricity to refrigerate food, circulate heat, light houses and streets, and much more. • Threat to multi-billion dollar public investment in infrastructure systems that require electricity—including water and sewer systems, airports, clinics and hospitals, and schools. 		
^a Analysis based on 1996 funding level of \$19 million ^b Based on 1996 electricity sales; excludes 11 communities with populations of roughly 1,000 to 5,000.		

- **Small size**, which means local utilities can't take advantage of economies of scale.

DO ALASKA NATIVE COMMUNITIES THAT CONTROL ALCOHOL HAVE FEWER VIOLENT DEATHS?

Source: Based on research by Matthew Berman, Teresa Hull, and Philip May, funded by the National Institute on Alcohol Abuse and Alcoholism. More detailed findings are available in papers on the ISER Web site and in the *Journal of Alcohol Studies*, March 2000

Small Alaska communities that controlled the sale or possession of alcohol may have prevented one fifth of the violent deaths that would otherwise have occurred between 1980 and 1993. That is one of the central findings of recent research by Matthew Berman and Teresa Hull of ISER and Philip May of the University of New Mexico.

Violent death rates in Alaska Native villages are several times higher than state and national rates, and most violent deaths in villages are in some way related to alcohol. The State of Alaska gives communities the authority to control alcohol, through a majority vote of local residents. The least restrictive controls are limiting alcohol sales to a single outlet or banning local sales. More restrictive are bans on importation or possession of alcohol.

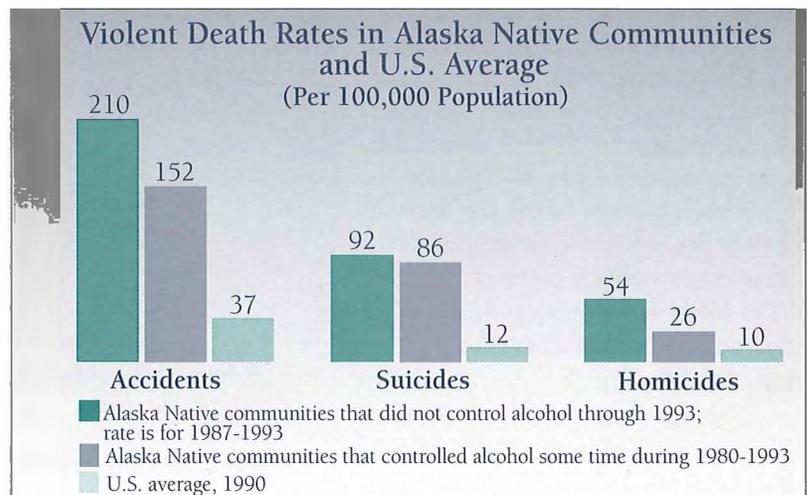
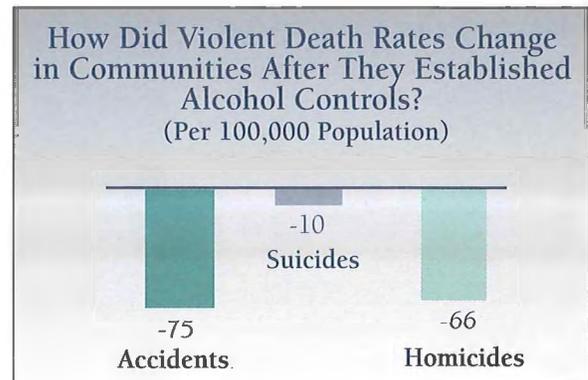
The researchers looked at:

- 97 small, remote Alaska Native communities that controlled alcohol at least part of the time between 1980 and 1993.

- 61 similar communities that did not control alcohol at any time during that period.

In the communities that controlled alcohol, the researchers compared death rates from accidents, suicides, and homicides when alcohol controls were in place and when they weren't. Some communities switched back and forth during that period—voting to control alcohol, then to remove the controls—and some made the switch more than once. The analysis found:

- **Homicide rates fell dramatically in villages when they controlled alcohol.** In a typical small community that controlled access to alcohol, rates of death from homicide dropped from 9 times the national average in 1980 to 2.6 times in 1990. The more restrictive the controls, the larger the drop.
- **Suicide rates didn't drop as much** as other rates of violent death in villages that controlled alcohol.
- **Rates of death per 100,000 dropped 75** for accidents, 10 for suicides, and 66 for homicides when communities controlled alcohol.
- **Communities that never controlled alcohol had consistently higher rates of all types of violent death.** As the figure above shows, the homicide rate in villages that did not control alcohol was twice as high, the rate of accidental death was nearly 25 percent higher, and the rate of suicide was slightly higher.



- **Violent death rates remained much higher than national averages, even in those Native communities that controlled alcohol.**

The finding that controlling access to alcohol appears to reduce violent deaths in Alaska Native villages differs from what other researchers have found when looking at violent deaths among other Native Americans. Several studies in other states have found that alcohol controls on Indian reservations may actually encourage unsafe drinking and increase deaths from drunk driving. The ISER researchers cite two main reasons why their findings may differ:

- **Unlike Native communities in other states, the Alaska villages that control alcohol are almost all far from road systems, making enforcement easier.**
- **In Alaska, alcohol is not restricted until local residents themselves choose to restrict it**—unlike on Indian reservations, where alcohol is banned by federal law unless tribal members vote to allow it in.

SEATBELT USE IN ALASKA IN THE 1990s

Source: *Assessment of Safety Belt Use in Alaska*, by Virgene Hanna and Jack Kruse, Summer 1999 and Summer 1992
Prepared for Alaska Highway Safety Planning Agency

About six in ten drivers and front-seat passengers wear seatbelts in Alaska's most populated areas, according to a 1999 survey ISER researchers did for the Alaska Highway Safety Planning Agency.

Since the 1980s, Alaska law has required drivers and riders in passenger cars and trucks to wear seatbelts. To be eligible for certain federal grants, states have to document seatbelt use.

Several times in the 1990s, ISER surveyed seatbelt use in Southcentral Alaska (Anchorage and the adjacent Mat-Su and Kenai Peninsula boroughs), the Fairbanks area, and Juneau. Altogether, about 85 percent of Alaskans live in those places. Researchers found:

- *Adults riding in the front seat are more likely than children to wear seatbelts.* Only about 5 in 10 children observed riding in the front seat during the 1999 survey were wearing seatbelts.
- *Car drivers are more likely than truck drivers to buckle up*—65 percent as compared with 48 percent in 1999.
- *Just over half of motorcycle drivers areawide wore helmets* in 1999.

Who Wears Seatbelts in Alaska?

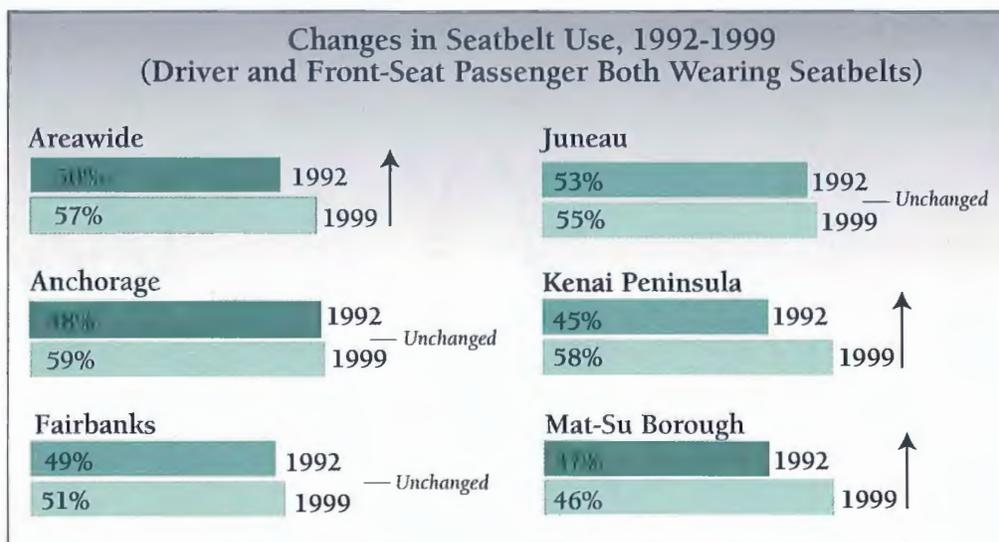
(1999 Survey)



- 61 percent of drivers in passenger vehicles
65 percent of car drivers
48 percent of truck drivers
- 60 percent of front-seat passengers
48 percent of children riding in front *
60 percent of adults riding in front
- 55 percent of motorcycle drivers wear helmets*

* Small samples

- *The share of vehicles areawide with both drivers and front-seat passengers buckled up was still not much over half by 1999, but it did increase between 1992 and 1999.*
- *Seatbelt use in Anchorage, Fairbanks, and Juneau remained virtually unchanged* in the 1990s, while use in the outlying areas was up substantially.
- *In the Mat-Su and Kenai Peninsula boroughs, seatbelt use increased significantly* over the past decade—but it remains below use in the largest cities.



HOW PROFITABLE WERE SALMON TRAPS?

Source: *Salmon Fish Traps in Alaska*, by Steve Colt, January 1999

After Alaska became a state in 1959, the new government immediately banned salmon traps, which at that time took about 25 percent of the total commercial salmon catch. Alaskans had fought for half a century to get rid of the traps, arguing that their technical efficiency threatened salmon runs, stole jobs from fishermen, and allowed the salmon canners to amass big profits.

But were salmon caught in traps in fact so much cheaper? And how did eliminating traps affect employment and income among fishermen? Steve Colt, a term assistant professor of economics at ISER, recently tried to answer those questions by looking at historical data. This is the first attempt to quantify the long-run effects of salmon traps.

The research was complicated because the data are incomplete and because the ban on traps coincided with Alaska statehood. Statehood itself undoubtedly affected participation in the salmon fisheries, apart from the ban on traps. Still, despite data problems, the research revealed:

- *The cost advantage of traps was not as large* as most people believed. Over the long run, salmon traps probably reduced the canneries' costs for raw salmon by about 10 percent, as compared with what they would have paid fishermen.
- *Numbers of salmon fishermen doubled* in the decade after traps were banned—but average incomes of fishermen changed little, despite rising prices.

- *By the 1970s, there were so many fishermen that overall profits from the salmon fishery were essentially zero:* as a group, fishermen were spending as much to catch salmon as they were paid for them.

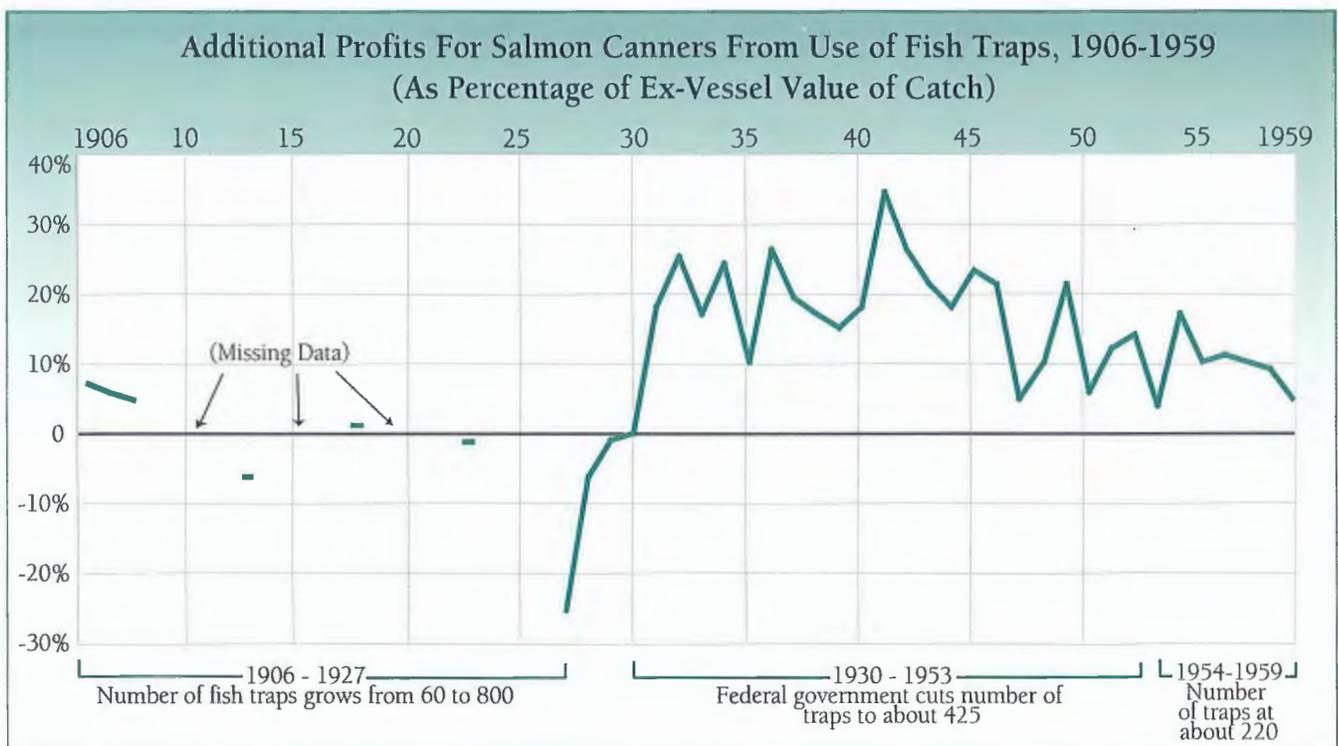
Advantages and Disadvantages of Traps

Traps were most efficient when the technology was new, the best locations were used, and the average annual yields per trap exceeded 10,000 fish. The advantages of traps included:

- High catching power, low labor requirements.
- Capacity to store fish live, giving canneries more control over the flow of fish to production lines.
- Near-equivalent of exclusive fishing zone, since other traps and fishing boats by law had to be a designated distance away.

But traps also had disadvantages, including:

- Substantial construction costs; traps had to be essentially rebuilt each year.
- Fixed location; a few feet in one direction or the other could drastically change catch.
- Costs of transporting fish to cannery.
- Larger share of risk during bad runs, since risks not shared with fishermen.



Additional Profits from Salmon Traps

Dr. Colt estimated the additional profits cannery operators collected from traps as a percentage of the ex-vessel value of the catch (the price paid fishermen). He found:

- *The total additional profits from salmon traps* probably amounted to about \$114 million (in \$1967)—or 10 percent of the ex-vessel value of the salmon catch—from 1906 through 1959. (But uncertainty created by incomplete data means that the additional profits could have been as little as 4 percent or as much as 22 percent.)
- *Extra profits varied sharply from year to year*—from 20 to 35 percent of the ex-vessel value of the catch in a few years to zero in others. The data suggest that traps may have actually cost the canneries profits in some years.

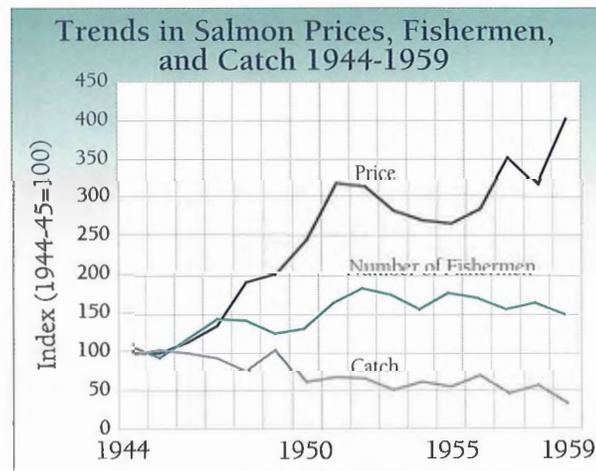
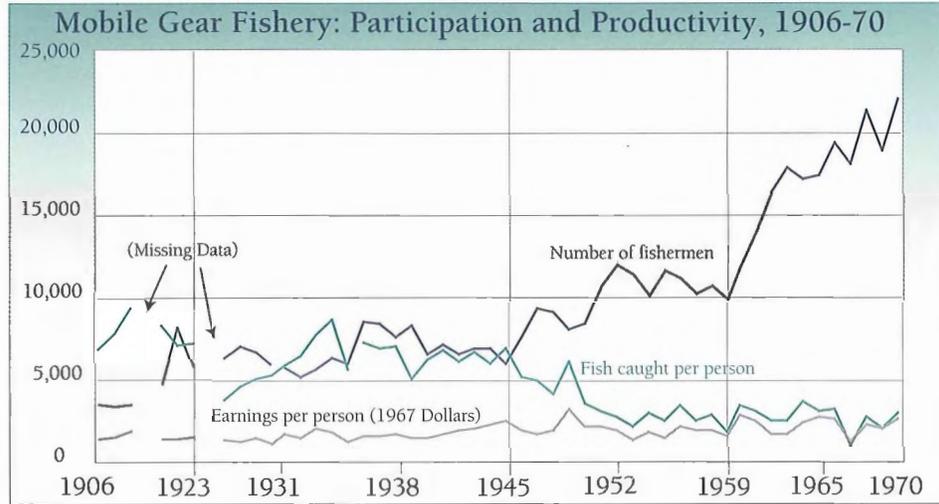
Fisheries are complex, and it's impossible to determine the relative importance of everything that influenced the profitability of salmon traps—especially given that the data are incomplete. But the number of traps was important. That number increased 10-fold between 1906 and 1927, and profits plummeted. Then the federal government cut the number by about half and profits rose again.

Also influencing the economics of fish traps, especially after World War II, were rising fish prices, growing numbers of boats and fishermen, and a decline of 50 percent in the salmon harvest between 1945 and 1959 (see graph to the right).

Changes in Employment and Income

Employment and income in the salmon fisheries did change in the first five years after traps were banned, but it's impossible to separate the effects of the ban from the broader effects of statehood—since the two changes happened simultaneously. The changes from 1960 to 1965 included:

- *Numbers of fishermen increased 55 percent*—from about 10,700 to 16,600—and numbers of purse seine boats jumped 45 percent. (Purse seiners are the closest alternative gear to traps.)
- *Catch per person increased about 12 percent.*
- *Earnings per fisherman jumped about 20 percent* over earnings for the previous five years, as prices and average catch per boat increased.



Long-Run Effects

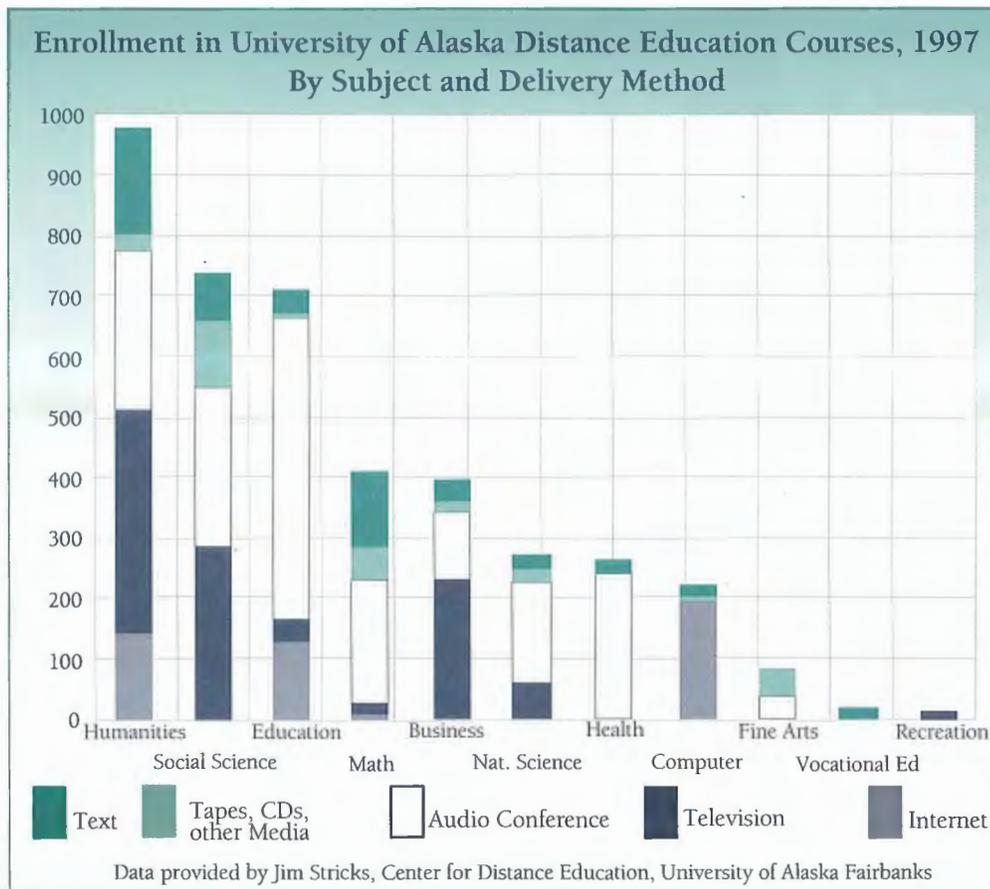
Looking at changes in numbers of fishermen, earnings, and catch per person over the long run (graph at top of page) helps put the effects of the ban in a broader perspective.

Numbers of fishermen began climbing in 1945, at the end of World War II. The number jumped most sharply after traps were banned, but continued climbing after that.

Despite some dips and spikes—like the one after traps were banned—real income per person stayed relatively steady from the 1940s through 1970, even as more fishermen came into the fisheries, because prices were rising.

So the ban on fish traps, together with rising prices, did boost fishermen's incomes temporarily but not over the long run. Banning traps without limiting numbers of fishermen meant profits from the fishery were divided among ever-growing numbers of fishermen, until collectively those profits became zero. That of course doesn't mean no individual fishermen made money.

Overall, the analysis shows that while under certain conditions traps are more economically efficient than fishing boats, the profits from any kind of gear—mobile or fixed—can go to zero when there is excess catching power.



SNAPSHOT OF DISTANCE EDUCATION AT THE UNIVERSITY OF ALASKA

Source: *Current and Future Demand for Distance Education*, by G. Williamson McDiarmid, Scott Goldsmith, Alexandra Hill, and Teresa Hull, February 1998

Prepared for Office of the President, University of Alaska Anchorage

In 1998, the president of the University of Alaska asked ISER to look at existing distance education at the University of Alaska and assess future demand. This is an important issue, with some analysts predicting that the dizzying growth in distance education will force big changes in higher education throughout the U.S.

“Distance education” means the instructor is not in the same room with students. In many of Alaska’s remote communities, distance education is one of the few sources of postsecondary education and training.

The National Center for Education Statistics (NCES) recently reported that 80 percent of the four-year public universities in the U.S. offered distanced education in 1997-1998, most commonly over the Internet or through television and interactive video.

NCES found that between 1995 and 1998, the number of colleges and universities offering distance education jumped by a third and course offerings doubled, attracting about 1.4 million students.

At the University of Alaska in 1997, more than 4,000 students in 178 Alaska places were enrolled in nearly 300 courses. Courses in humanities, social sciences, and education were the most popular (see figure above).

In interviews with instructors and employers, ISER learned about problems with and potential areas of growth for UA’s distance education.

- *Technical problems with classes that use the Internet and electronic mail hamper growth of distance education.*
- *Lack of personal contact with students and lack of support services are shortcomings.*
- *Computer technology, health care, public administration, management, accounting, counseling, and professional development for teachers are areas where distance education could provide needed education and training, according to rural employers and organizations.*



OTHER PROJECTS AND PROGRAMS

Kids Count Alaska (www.kidscount.alaska.edu).

Funded by the Annie E. Casey Foundation, the *Kids Count Alaska* program has since 1995 tracked changes in the health, education, and safety of Alaska's children. It is a joint project of ISER and UAA's Department of Psychology. The next *Kids Count Alaska* data book will be published in late 2000. Past data books are available on the *Kids Count Alaska* Web site.

Alaska Native Studies Curriculum and Teacher Development (www.alaskool.org)

This Web site uses the most modern of technology to reveal the histories, cultures, and languages of the people who have inhabited Alaska for thousands of years. It is a joint project of Alaska Native educators and school districts and ISER. The project team continuously adds to the site, which features rare documents, historical photos, out-of-print books by Native authors, a Cup'ik curriculum, and Native elders narrating traditional stories. The project began in 1998 and is funded by the U.S. Department of Education.

Seafood Market Information Service (seamarkets.alaska.edu)

An online database, this information service reports current information on Alaska seafood markets. It is based within the University of Alaska's Marine Advisory Program and directed by Gunnar Knapp, a professor of economics with ISER. Funding agencies are the Sea Grant program, the Alaska Department of Commerce and Economic Development, and the University of Alaska's Natural Resources Fund.

ISER Web Site (www.iser.uaa.alaska.edu)

Recent reports—or summaries of reports—on a number of subjects are available on the ISER Web site.

Alaska Native Studies

Recent ISER studies include an assessment of current and future job opportunities for Alaska Natives and an analysis of ways to strengthen Native self-governance. These reports are on the ISER Web site under "Alaska Native and Rural Studies."

Rural Sanitation Studies

How to bring safe but affordable water and sewer systems to hundreds of small, remote villages is a major public policy issue for Alaska. Several recent and current ISER studies look at aspects of that issue. Reports and descriptions of ongoing work are on the ISER Web site under "Alaska Native and Rural Studies."

Fisheries Reports

ISER has a number of recent reports on Alaska's fisheries, including an assessment of the economic significance of sport fishing and some preliminary analysis of results from a survey asking halibut fishermen how they feel about the Individual Fishing Quota (IFQ) program. Look under "Resource Studies" on the ISER Web site.

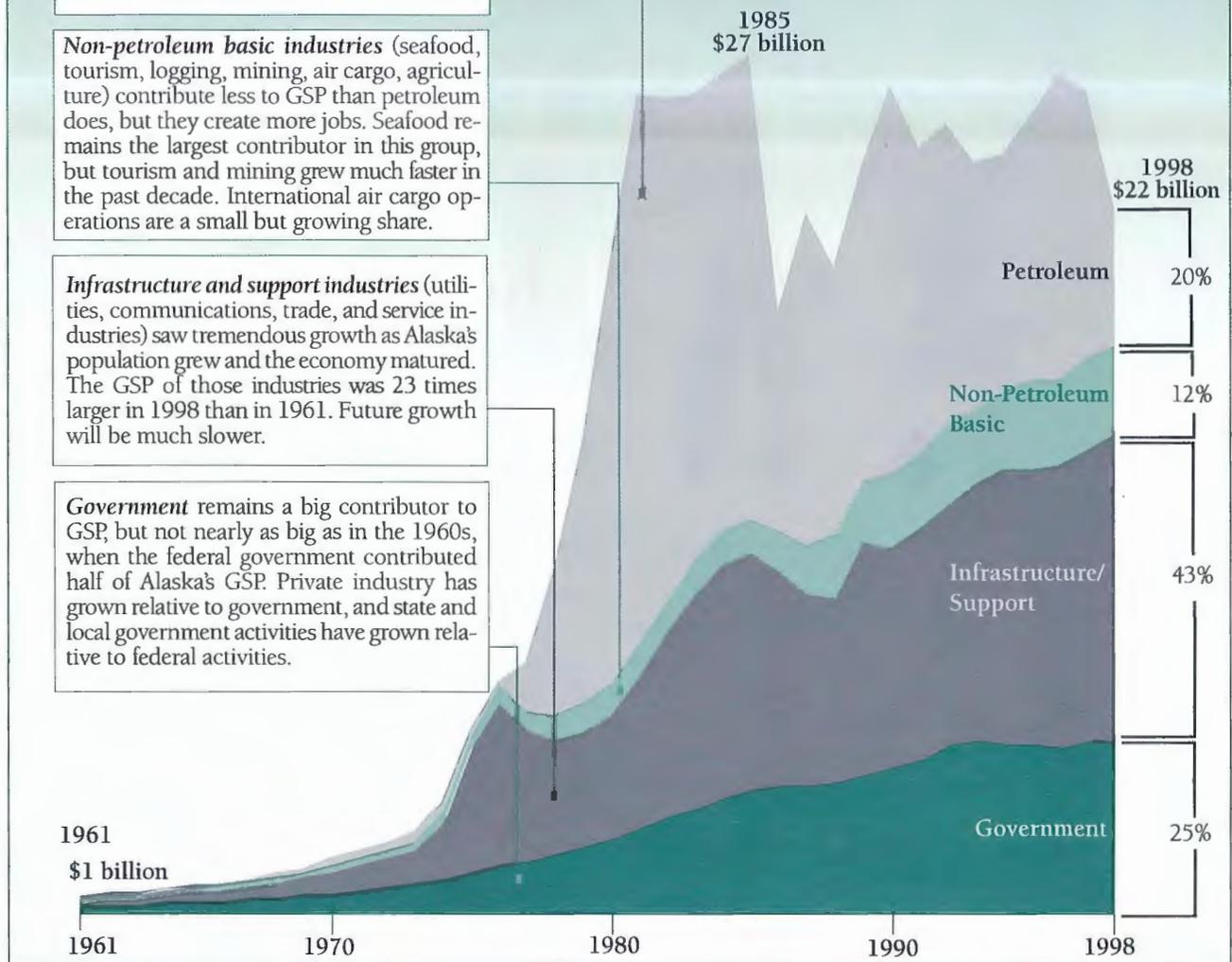
Alaska's Gross State Product, 1961-1998 (In Billions of Current Dollars)

Petroleum has driven Alaska's economy since the 1970s. It generated as much as two thirds of total GSP in the 1980s, when oil prices and production peaked and as little as one fifth in 1998, when oil prices crashed. Petroleum GSP will be larger in 2000, since oil prices in 2000 are triple their 1998 lows.

Non-petroleum basic industries (seafood, tourism, logging, mining, air cargo, agriculture) contribute less to GSP than petroleum does, but they create more jobs. Seafood remains the largest contributor in this group, but tourism and mining grew much faster in the past decade. International air cargo operations are a small but growing share.

Infrastructure and support industries (utilities, communications, trade, and service industries) saw tremendous growth as Alaska's population grew and the economy matured. The GSP of those industries was 23 times larger in 1998 than in 1961. Future growth will be much slower.

Government remains a big contributor to GSP, but not nearly as big as in the 1960s, when the federal government contributed half of Alaska's GSP. Private industry has grown relative to government, and state and local government activities have grown relative to federal activities.



Source: Alaska Gross State Product, by Scott Goldsmith, June 1999. Prepared for Alaska Dept. of Community and Economic Development.

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