ALASKA ECONOMIC TRENDS

DECEMBER 2023

AQUACULTURE
a growing industry

ALSO INSIDE

How we get to work

A look at teachers

ALASKA DEPARTMENT OF LABOR & WORKFORCE DEVELOPMENT • **RESEARCH AND ANALYSIS**

FROM THE COMMISSIONER

Alaska's successes and priorities for the year ahead

By Catherine Muñoz, Acting Commissioner

As the year comes to a close, it is important to reflect on notable accomplishments and the collaborative work of many to make Alaska a great place to live and raise a family. Workforce challenges have aligned our focus across all industries to work together to find solutions.

The Alaska Job Center Network provided financial support to a record number of Alaskans for industry-recognized certifications and training. In the first few months of the fiscal year, more than 900 Alaskans received support for occupational training and credentials. This was a 28 percent increase from last year, providing employers with local talent to fill workforce needs.

While teachers' salaries are set at the local level, Governor Dunleavy introduced House Bill 106 last session to address teacher retention and recruitment. HB 106 would create three pay incentive tiers of $5,000, $10,000, and $15,000 a year over three years with a proposed budget of $60 million. The legislation is currently in the House Finance Committee. If approved by the Legislature, school districts will be able to address this top-priority recommendation from the Governor's Task Force on Teacher Retention and Recruitment.

In April, we reestablished the Office of Citizenship Assistance in the Commissioner's Office. Created in statute in 2004, OCA helps legal refugees and immigrants find gainful employment and training opportunities in Alaska. OCA addresses barriers to employment including training, licensure, and language, and prepares new J-1 visa teachers to promote excellent educational outcomes for our youth.

AVTEC, in partnership with UAA Kenai River Campus, the Alaska Safety Alliance, and Yamaha USA, is offering the first outboard engine maintenance repair training featuring Yamaha products starting Jan. 15 at the UAA Kenai River Campus. This new training will support rural and urban communities throughout the state and includes a "train the trainer" component.

The department's Mechanical Inspection team has enacted a regulatory change that allows third-party testing in Alaska for plumbing and electrical licensees. Historically, there was a 4-8 week waiting period between acquiring the necessary hours and scheduling the state-administered test. The change will allow unions and online testing facilities to administer licensing tests, shortening the wait times to get electrician journeyman and plumber journeyman licenses to days instead of weeks.

In October, through the Alaska Workforce Investment Board, the department hosted an industry-led convening on the workforce. The convening gathered key representatives from Alaska's industries to listen to their feedback on current and future workforce needs and the state's training gaps. The next day, Alaska's training providers identified the clear next steps to address industry priorities. Key takeaways included strong support for career guides at the secondary school level and a coordinated media campaign to raise awareness among young people about the many career pathways in Alaska. The important work done at the convening will result in an updated Statewide Workforce Plan to be presented to Governor Dunleavy and the Legislature in early 2024.

I am grateful for the Department of Labor and Workforce Development team and the many positive collaborations this year.

I wish you and your families a wonderful holiday season and a prosperous new year.

Sincerely,

Catherine Muñoz

Contact Acting Commissioner Catherine Muñoz at
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This photo of a giant kelp is by Flickr user John Turnbull. Giant kelp is one of the varieties of kelp farmed in Alaska.
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DEPARTMENT of LABOR and WORKFORCE DEVELOPMENT

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ALASKA ECONOMIC TRENDS

Trends is a nonpartisan, data-driven magazine that covers a variety of economic topics in Alaska.

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Alaska aquaculture is blooming

Once just salmon, rearing expands to kelp and shellfish

By SARA WHITNEY

Alaska has more coastline than the lower 48 states combined and an abundance of clean water, but only in June of this year was Alaska deemed a federal aquaculture opportunity area. That means the state is environmentally, socially, and economically able to support multiple commercial aquatic farming operations.

According to the National Oceanic and Atmospheric Administration, Alaska received more letters of support than any other region and zero public opposition.

While salmon hatcheries began operating in Alaska in the early 1970s to rejuvenate the state's fisheries, shellfish and aquatic plant farming were first approved in 1988 but slow to take root. Modern commercial seaweed cultivation in Alaska didn't begin until 2017.

Mariculture, or marine aquaculture, has flourished in recent years. Alaska is now home to the largest kelp farm in the United States, Seagrove Kelp, which covers 100 acres near Craig. Mollusks, various types of seaweed, sea cucumbers, and urchins are grown along the southeastern, southcentral, and southwestern coasts. Alaska has 95 active operations, and permitted acreage has grown from less than 350 acres in 2016 to more than 1,360 today.

Kelp and shellfish values and select harvests in 2022

Species	Farms reporting	Harvest	Value of sales to public
Oysters	28	6.8 million*	$1.5 million*
Kelp	10	872,288 lbs	$278,929
Mussels	3	510 lbs	$2,990

*1.9 million oysters were sold to the public and 4.9 million were sold to other farms, but value is for public sales only.
Note: Small harvests/individual farms are not publicly reported.

Source: Alaska Department of Natural Resources

Oysters are the money-maker

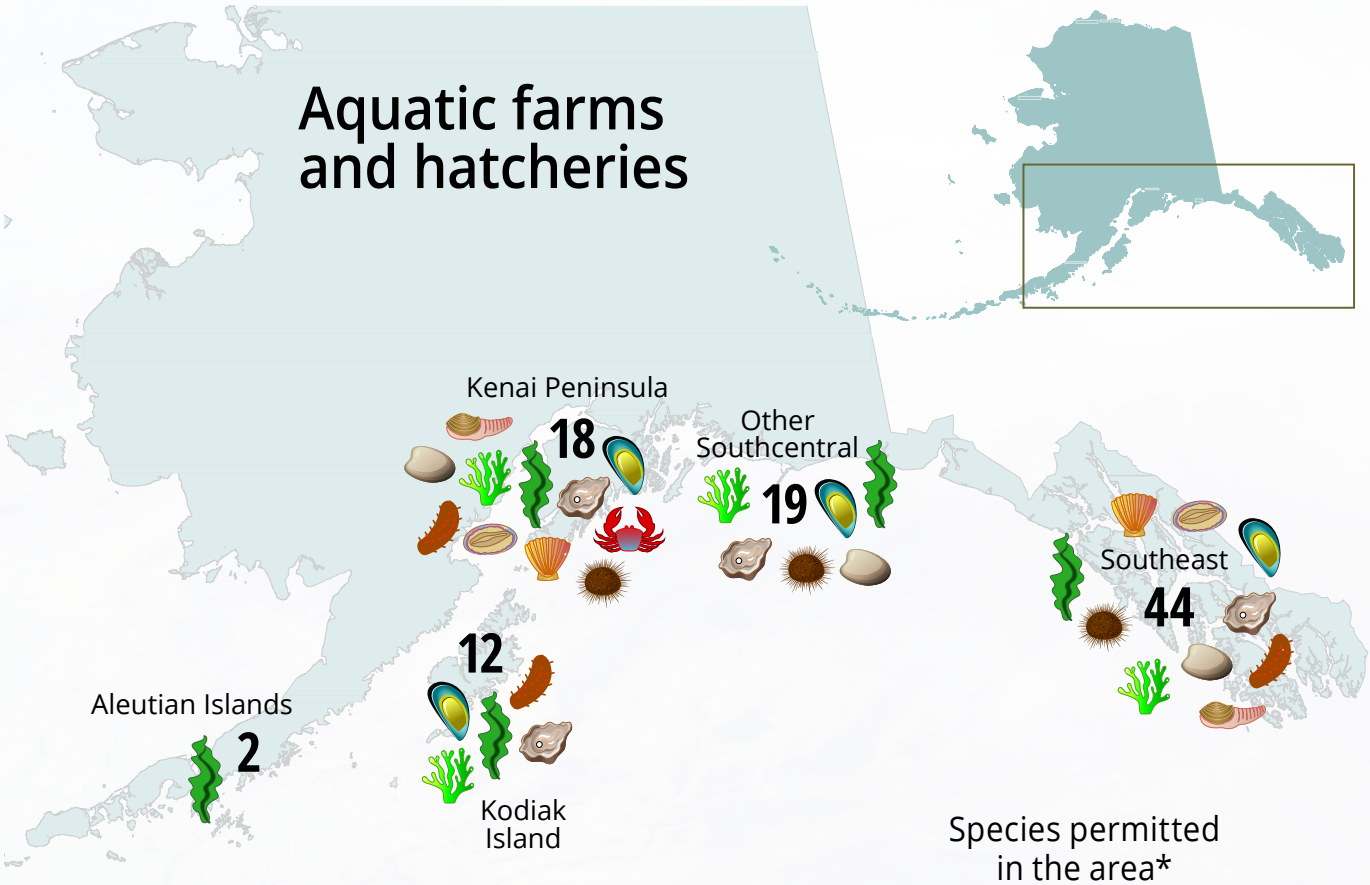
As the map on the next page shows, Alaska's operations farm a plethora of marine species. Oysters are the highest-value harvest, with the Pacific oysters

Text continues on page 6

Oysters grow at the Hump Island Oyster Company in Ketchikan. The oysters are suspended in bags under these rafts. Visible in the background, kelp is farmed via rope suspension beneath the buoys.

This photo and the banner photo of kelp are by Steven Whitney, National Marine Fisheries Service

Aquatic farms and hatcheries



Species permitted in the area*

- Kelp
- Other seaweed
- Mussel
- Oyster
- Sea cucumber
- Urchin
- Scallop
- Clam
- Geoduck
- Red/blue king crab*
- Abalone

Notes: As of November 2023. Permits include farms as well as aquatic farm hatchery permits for providing seed or stock to other farms.
*Icons mean that species is listed on at least one permit in that area/region and do not indicate specific locations. King crab is hatchery only.

Sources: Alaska Department of Fish and Game, Alaska Department of Natural Resources, and Alaska Department of Labor and Workforce Development, Research and Analysis Section

Some of the species that can be raised in Alaska might surprise you

While aquatic farms and hatcheries are usually permitted for a larger variety of species than they actually grow, current permits include these specific species under the larger categories on the map.

OYSTERS and MUSSELS are blue mussels, Pacific oysters, and Kumamoto oysters.

KELP includes ribbon kelp, sugar kelp, bull kelp, five-ribbed kelp, three-ribbed kelp, split kelp, giant kelp, broad-ribbed kelp, dragon kelp, and spaghetti kelp.

OTHER SEAWEED includes black seaweed-nori, red ribbon-dulse, stiff ribbon-dulse, sea lettuce, dark sea lettuce, beach asparagus, seagrass laver, and fucus.

URCHINS and SEA CUCUMBERS are green and red sea urchins and California sea cucumbers.

SCALLOPS are weathervane scallops, pink scallops, purple-hinged rock scallops, and spiny scallops.

CLAMS are mainly geoducks followed by cockles, butter clams, littleneck clams, and Pacific razor clams.

Pinto abalone and red or blue king crab (one hatchery only) are also permitted. One Southeast permit includes sea staghorn, a coral.

sold to the public worth nearly $1.5 million in 2022, a number that's climbing again after taking a hit during the pandemic when demand plummeted.

Oysters are also a special case, as they are the non-native species that can be imported and farmed in Alaska. Farms purchase seed stock from other West Coast states and Hawaii and grow the oysters here, but they can't reproduce in Alaska because the water is too cold. They also grow slower in our waters.

Shellfish cultivation in Alaska is mainly oysters, but farms include multiple varieties of mussels, clams, scallops, sea urchins, and sea cucumbers.

Seaweed is a newcomer with many uses, and it's expanding

Most of the oysters grown in Alaska are consumed here, but seaweed goes mainly to Asia, where it's a much larger part of their market and cuisine. Seaweed's popularity in food is taking off in the United States, though.

Farming seaweed — especially kelp — is the fastest-growing branch of the aquaculture industry. Alaska farms sold nearly 873,000 wet pounds of kelp last year to the public or other farms, up from almost nothing in 2016. That doesn't include the wild kelp harvested commercially.

Maine dominates U.S. production by a large margin, and Alaska is second. Alaska still represents a fraction of a percent of the world's seaweed market, but recent growth and feasibility studies on several parts of the state suggest there's room for expansion. So does the growing list of uses.

Seaweed goes into a variety of medicines, foods, and personal care products across the world. It's a good thickener, for example, and it's even hiding in your toothpaste.

Food-wise, dried sheets for sushi might come to mind, but seaweed is popping up in more and more products. You can find it in pasta or as tea or jerky. Juneau-based Barnacle Foods' popular kelp salsas, sauces, and pickled snacks are now sold beyond our borders. Maine is known for its kelp flakes, kelp seasoning, and even kelp burgers.

Seaweed has biological and environmental value as well. Kelp forests support the fishing and recreation industries by providing biologically productive habitats for other marine species. Seaweed also absorbs carbon dioxide and can ease local impacts from ocean acidification.

The U.S. Department of Energy is developing seaweed as a petroleum substitute for producing plastics and biodiesel in the future, but right now, the food

Numbers of aquatic farm and fish hatchery business licenses

Type of operation	Licenses
Fish hatcheries	24
Shellfish farming	50
Aquatic plants and misc.	120

Notes: As of November 2023. Some have multiple facilities while others have multiple people licensed at one business or licenses in multiple categories. Includes Alaska-based licenses only.

Source: Alaska Department of Commerce, Community, and Economic Development, Division of Corporations, Business, and Professional Licensing

Aquaculture licenses by area and type

Area	Aqua plants and misc.*	Shellfish farming	Fish hatcheries
Kenai Peninsula Borough	26	13	5
Valdez and Cordova	21	5	2
Anchorage	13	3	7
Kodiak Island Borough	13	2	3
Prince of Wales Census Area	10	8	1
Ketchikan Gateway Borough	9	11	–
Juneau	7	3	2
Matanuska-Susitna Borough	5	1	1
Petersburg Borough	5	–	–
Wrangell Borough	4	1	1
Sitka	2	2	1
Dillingham Census Area	2	–	–
Fairbanks North Star Borough	2	–	–
Hoonah-Angoon Census Area	1	–	–
Yukon-Kuskokwim Census Area	–	–	1
Lake and Peninsula Borough	–	1	–

*This category, "other aquaculture," is mainly seaweed but includes a small number of worm, betta, and axolotl cultivators and hydroponic operations.
Notes: As of November 2023. Some have multiple facilities while others have multiple people licensed at a single business or licenses in multiple categories.

Source: Alaska Department of Commerce, Community, and Economic Development, Division of Corporations, Business, and Professional Licensing

At left, Barnacle Foods workers harvest kelp at the Hump Island Oyster Company in Ketchikan. Above, a worker seasons kelp pickles at Barnacle's kitchen in Juneau.

Photos by Steven Whitney, National Marine Fisheries Service

market is more lucrative for the amount of seaweed produced.

The most popular species grown commercially are ribbon, sugar, and bull kelp, but Alaska farms are permitted for a long list, from nori to sea lettuce.

Salmon hatcheries came first

While seaweed and shellfish farms have taken the spotlight in recent years, salmon hatcheries represent the bulk of aquaculture in Alaska. (See the November 2013 issue of *Alaska Economic Trends* for more on fish hatchery history and operation.)

Alaska's aquaculture firms with employees in 2022, at a glance

Total employers	16, at ~40 sites
Total average employment	349 jobs
Peak month, August	453 jobs
Low month, December	218 jobs
Total wages paid in 2022	$17,337,364
Average monthly wage	$3,325

Note: Excludes self-employment. Firms with employees are mostly fish hatcheries and shellfish farms. Includes aquaculture support jobs such as administrators and receptionists.

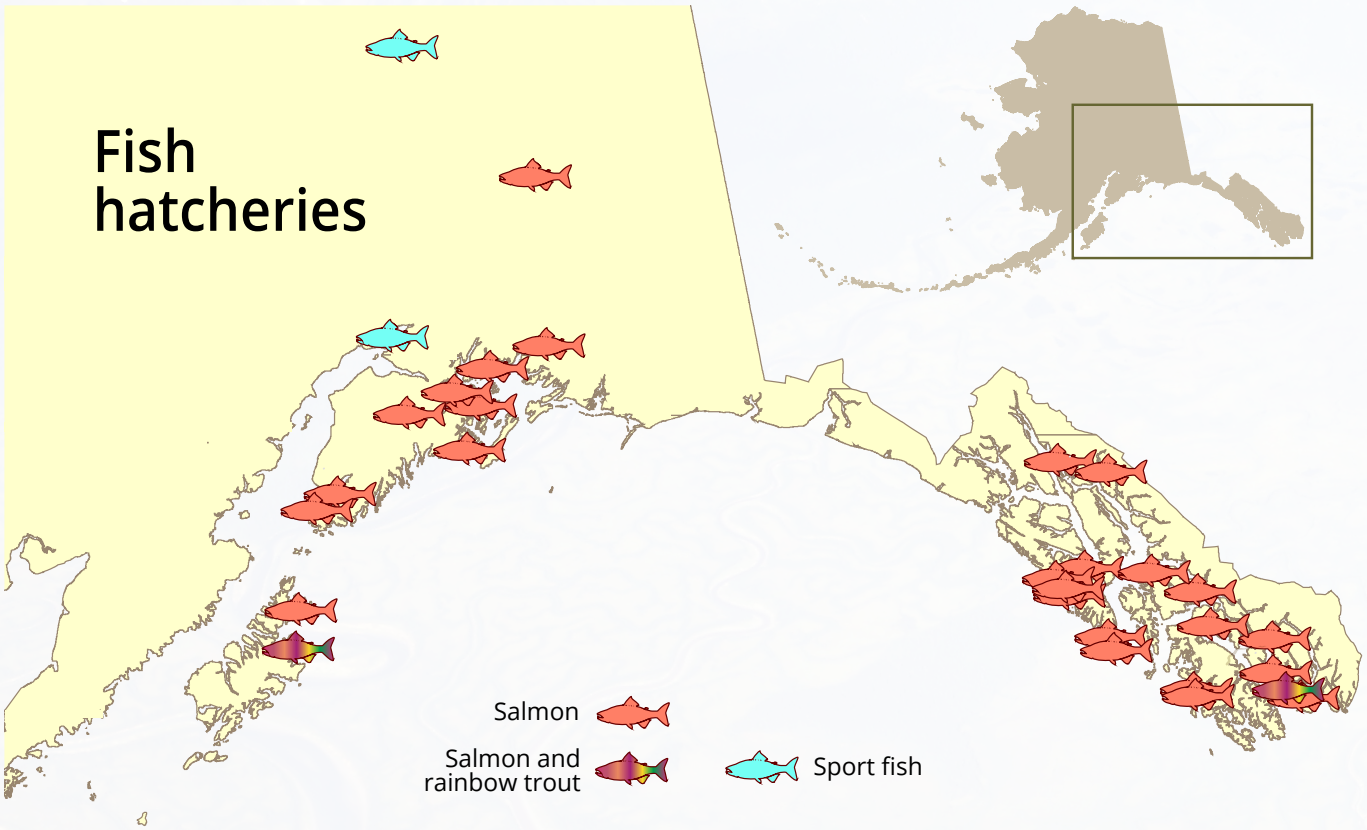
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

Their impact is huge. Alaska fish hatcheries released nearly 2 billion fry into Alaska waters in 2022, and about 43.3 million hatchery fish returned, worth an estimated $163 million. Those fish represented 25 percent of the state's salmon harvest and 23 percent of its ex-vessel value, or the amount paid to fishermen by processors.

Hatcheries cultivate salmon through a method called ocean ranching, rearing and then releasing juvenile salmon into the wild to return as adults.

Alaska bans the fish farms common around the world and in many states. Statute prohibits cultivating finfish "in captivity or under positive control for commercial purposes" but allows for "fishery rehabilitation, enhancement, or development activities … [and] the ability of a nonprofit corporation that holds a salmon hatchery permit to sell salmon returning from the natural water of the state, or surplus salmon eggs, rearing and sale of ornamental finfish for aquariums or ponds provided the fish are not reared in or released into the water of the state."

> Only native species can be farmed in Alaska. The exception is oysters, which can be seeded from warmer coastal states.



Notes: Shows main location. Some hatcheries operate multiple sites. Sport fish hatcheries release salmon, trout, and Arctic char into landlocked lakes and some Southcentral streams and lagoons.

Sources: Alaska Department of Fish and Game and Alaska Department of Labor and Workforce Development, Research and Analysis Section

That means Alaska can rear baby salmon and release them into the wild to supplement natural-born stocks, but not raise them to adulthood and sell them out of captivity as fish farms do elsewhere.

Hatcheries give eggs a higher survival rate than they would have otherwise. According to the industry group Salmon Hatcheries for Alaska, in the wild, just 10 percent survive to become fry, but for hatchery eggs, it's 90 percent.

As mentioned earlier, except for oysters that must be continually seeded from out-of-state stock, only native species can be raised. Hatcheries rear all types of wild Alaska salmon and trout but no walleye, perch, or other game fish.

Many hatcheries operate in multiple locations, some temporarily or periodically. Fish and Game lists 30 hatcheries for 2022. (See the map above.) Twenty-six are run by private nonprofits, National Marine Fisheries Service operates one research hatchery, and the Metlakatla Indian Community oversees the Tamgas Creek Hatchery under federal regulation.

The state also operates two sport fishing hatcheries: the William Jack Hernandez Hatchery in Anchorage and the Ruth Burnett Hatchery in Fairbanks. They release around 7 million salmon, trout, and Arctic char each year, the former into Southcentral lagoons, lakes, and creeks and the latter into landlocked Interior and Southcentral lakes.

Those with employees average nearly 350 jobs over the year

As the sidebar on the next page details, there's no single data source on aquaculture, but looking at permitting, licenses, and the limited amount of employment and wage data gives some sense of the industry's reach.

Many are sole proprietorships, but 16 employers in Alaska reported quarterly jobs and wages paid to their employees in 2022 at around 40 different sites. While the number of employees at each business varied from none to 123 in any given month, the total number of jobs over the year averaged 349. Jobs peaked in late summer, with employment spanning the full year.

These employers — mainly salmon hatcheries and

oyster farms — paid more than $17 million in wages last year.

These are conservative numbers, as they only include businesses that grow their own harvests. Barnacle Foods, for example, falls under seafood product manufacturing because they harvest kelp in the wild or buy it from Alaska kelp farms.

Seaweed and shellfish farms occupy just 2 square miles.

Other sources paint a picture of how far this industry stretches

Business licenses add another angle, as they capture the self-employed. In November, Alaska had 24 active business licenses for fish hatcheries, 50 for Alaska-based shellfish farms, and 120 under "other aquaculture."

That catch-all category is mainly seaweed farming but includes a handful of hydroponic growers and commercial cultivators of nonmarine species such as worms, bettas, and axolotls, to name just a few examples. These species, often grown in ponds or manmade structures, can be raised and sold as long as they are strictly ornamental and are not released.

Multiple state and federal agencies play a role in assessing and permitting aquatic farms, and approval hinges on environmental and other factors. The Alaska Department of Natural Resources handles leasing on state-owned tidelands, good for 10 years, and the Department of Fish and Game permits the operations. The map on page 5 shows the 95 aquatic farming operations' spread and the types of species permitted in each region, although permits don't mean a farm or hatchery is growing every species on its list or is currently growing and selling.

Salmon hatcheries aren't included in the aquatic farms category and are covered separately. Hatchery permits for aquatic farms mean the farm cultivates shellfish or marine plant stock or seed to supply to other farms.

Southeast has the largest number of aquatic farms (and the most fish hatcheries), followed by the South-central Region — mainly Prince William Sound — and the Kenai Peninsula, and then Kodiak Island. Even Adak in the Aleutians has two permitted kelp farms.

Aquaculture doesn't take up much space compared to most farming

Overall, Alaska had nearly 1,360 acres of permitted aquatic farms as of November, which is only about 2 square miles total.

While not directly comparable, for context, the average U.S. farm size was 446 acres in 2022, or about two-thirds of a square mile, according to the U.S. Department of Agriculture.

Farms of all types take up around 40 percent of the nation's landmass, covering nearly 1.4 million square miles. Cattle and dairy farming represents about 44 percent of that farmland, with oilseeds and grains second at around 30 percent.

Sara Whitney is the editor of *Alaska Economic Trends*. Reach her in Juneau at (907) 465-6561 or sara.whitney@alaska.gov.

About the data

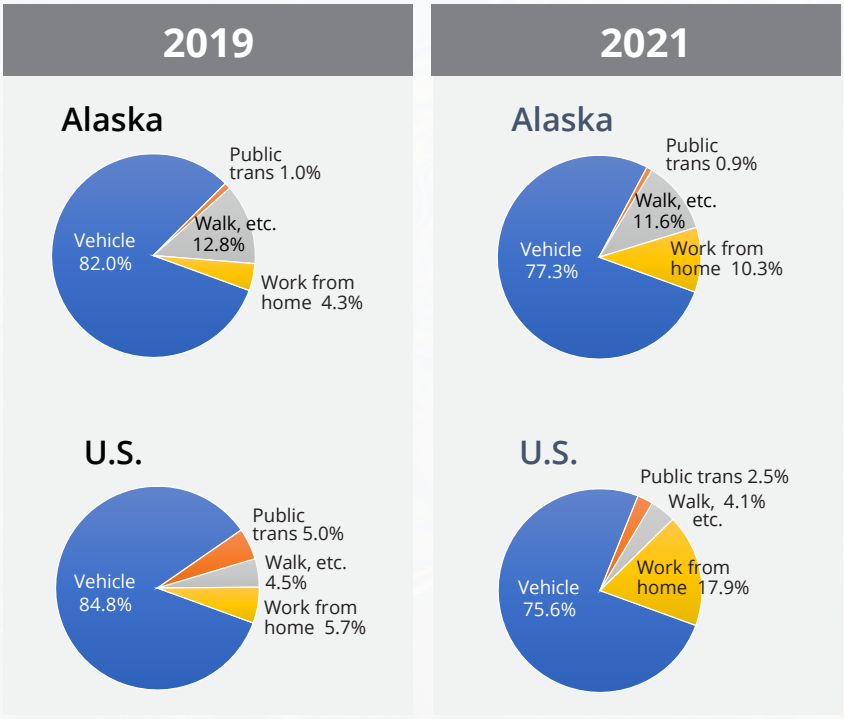
Aquaculture refers to any breeding, raising, or harvesting of fish, shellfish, and aquatic plants for food or other commercial products, and it can be in salt water or fresh water. Marine aquaculture is often called mariculture. While mariculture is the bulk of aquaculture in Alaska, this article uses the umbrella term aquaculture that appears in federal and state data sources, which include some freshwater cultivation.

No single data source provides a comprehensive picture of aquaculture as an industry in Alaska, so this article cobbles together several sources on different aspects of marine cultivation to get a sense of the size and economic impact. Our employment and wage data cover only the ventures with employees, so we also looked at business licenses and state permits to estimate how many people and operators are involved as well as harvest data and value. Each source has its limitations. For example, an active business license or active aquatic farm permit doesn't necessarily mean the cultivator is always growing or selling, or that the operation is producing every species permitted.

Commutes look different in Alaska

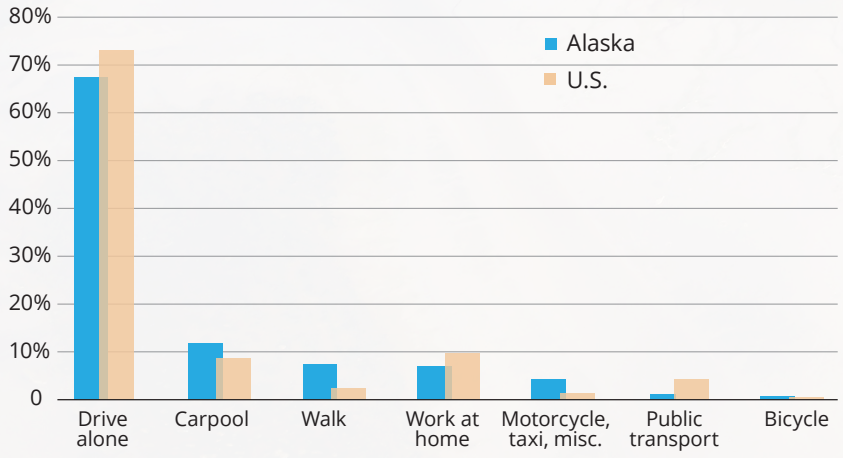
Pandemic shifted the patterns everywhere slightly

The pandemic altered the commute mix



Source: U.S. Census Bureau, American Community Survey, 2019 and 2021

How Alaska and U.S. commutes compare



Source: U.S. Census Bureau, American Community Survey, 2017-2021

By ROB KREIGER

Commuting in Alaska has always looked different from the Lower 48, and while the pandemic altered patterns for both, the overall differences remain.

A smaller share of Alaskans work at home than they do nationally, although the number of telecommuters has increased substantially everywhere since 2019.

Driving remains the most common way to get to work both here and down south, but Alaskans are more likely to walk and less likely to use public transportation.

Average commutes are also shorter in Alaska, although Alaskans who do commute longer distances tend to work in a different part of the state than where they live. The typical suburb-to-city commute is rare here, with one exception: the Matanuska-Susitna Borough to Anchorage drive.

The lack of suburbs and limited connectivity of road systems in Alaska are the main reasons for these differences, and availability is another — common U.S. public transit systems are neither present nor practical in Alaska.

Telework became more common

While the percentage of people who work at home has increased

significantly since 2019 in both Alaska and the U.S., it's more common for the rest of the country.

A comparison of 2019 and 2021 commuter data showed that before the pandemic, remote work represented an estimated 4.3 percent of Alaska workers and 5.7 percent nationwide. By 2021, teleworking in Alaska had more than doubled, to 10.3 percent, and more than tripled nationally, to 17.9 percent.

Overall, the U.S. industry mix is better suited to telework, with more large corporate and tech companies than Alaska, although industry makeup varies by state.

Most workers still drive, but Alaskans are more likely to walk

While more people are working at home, driving to work — usually alone — remains the most common method by far for Alaskans and Americans in general. People who drive themselves or carpool represent about 80 percent of commuters in Alaska, similar to the U.S.

Alaska workers walking might seem surprising at first, given the state is so spread out, but even jobs in remote areas tend to be close to people's homes. Alaska doesn't have many cities surrounded by smaller communities, unlike the major metropolitan areas throughout the rest of the country.

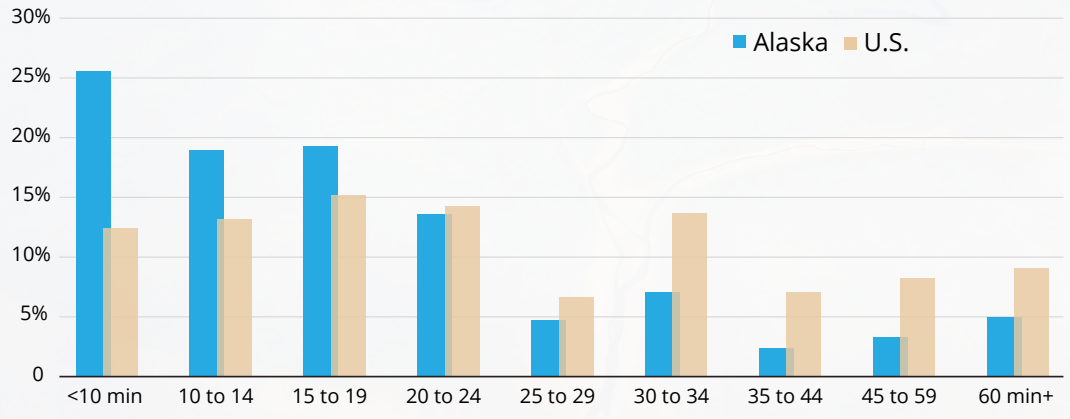
Fewer Alaskans use public transportation, for similar reasons. While larger cities in Alaska offer some public transport — mainly buses — mass transit such as light rails and subways isn't available here. Most places don't have the population to support it.

Average one-way commutes by Alaska area, 2017-2021

Borough or Census Area	Commute, minutes
Matanuska-Susitna Borough	36.1
Copper River Census Area	27.2
U.S. average	**26.8**
Kenai Peninsula Borough	20.6
Fairbanks North Star Borough	19.5
Alaska	**19.5**
Anchorage, Municipality	19.0
Southeast Fairbanks Census Area	16.0
Denali Borough	15.7
Juneau, City and Borough	15.5
Prince of Wales-Hyder Census Area	15.2
Hoonah-Angoon Census Area	14.7
Ketchikan Gateway Borough	14.2
Bristol Bay Borough	12.2
Haines Borough	11.2
Kodiak Island Borough	11.1
Sitka, City and Borough	11.0
Chugach Census Area	9.7
Dillingham Census Area	9.3
Yukon-Koyukuk Census Area	9.1
Bethel Census Area	7.5
Petersburg Borough	7.3
North Slope Borough	7.2
Wrangell, City and Borough	7.1
Kusilvak Census Area	6.8
Aleutians West Census Area	6.2
Nome Census Area	6.0
Northwest Arctic Borough	5.9
Lake and Peninsula Borough	5.7
Aleutians East Borough	5.7
Skagway, Municipality	5.5
Yakutat, City and Borough	4.7

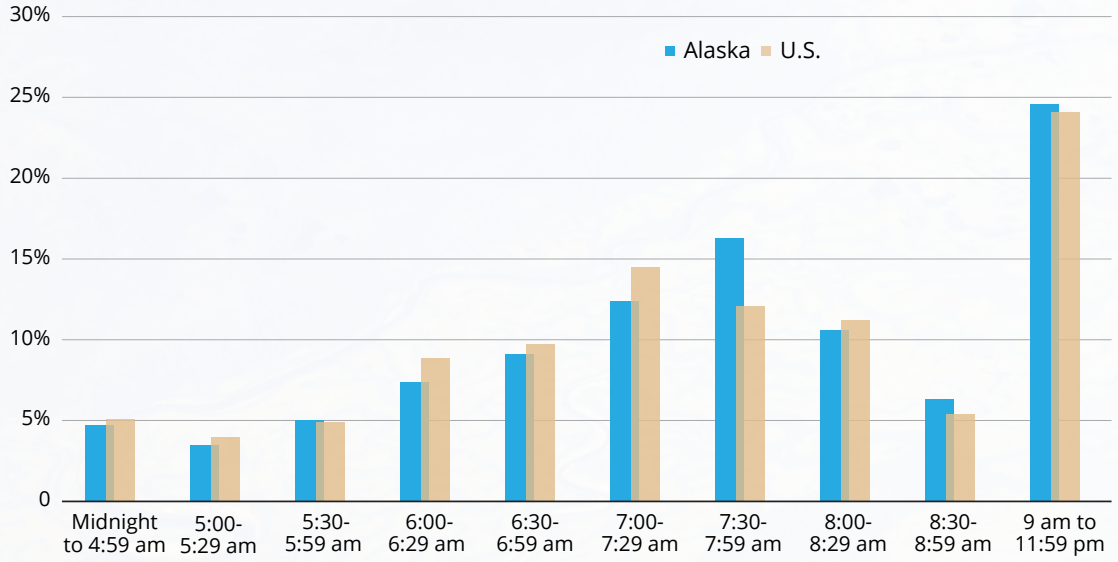
Source: U.S. Census Bureau, American Community Survey, 2017-2021

Alaska commutes are short, most under 20 minutes



Source: U.S. Census Bureau, American Community Survey, 2017-2021

Most in Alaska and nationwide leave for work before 9 a.m.



Source: U.S. Census Bureau, American Community Survey, 2017-2021

Alaska's in-state commuters, 2021

Borough or Census Area	Total AK residents living in the area	Pct commuting elsewhere in AK
Matanuska-Susitna Borough	45,365	41.5%
Copper River Census Area	1,191	30.1%
Southeast Fairbanks Census Area	2,425	21.8%
Kusilvak Census Area	3,470	21.7%
Hoonah-Angoon Census Area	839	21.6%
Yukon-Koyukuk Census Area	2,485	19.6%
Haines Borough	1,040	19.6%
Denali Borough	774	19.1%
Lake and Peninsula Borough	695	18.6%
Kenai Peninsula Borough	24,511	17.7%
Prince of Wales-Hyder Census Area	2,435	16.2%
Chugach Census Area	3,146	15.7%
Bristol Bay Borough	386	13.5%
Wrangell, City and Borough	795	13.5%
Fairbanks North Star Borough	36,778	11.1%
Yakutat, City and Borough	291	10.3%
Anchorage, Municipality	128,660	10.1%
Dillingham Census Area	1,998	9.8%
Ketchikan Gateway Borough	6,281	8.8%
Kodiak Island Borough	5,305	8.6%
Aleutians East Borough	646	8.4%
Petersburg Borough	1,252	8.2%
Juneau, City and Borough	15,545	8.0%
Skagway, Municipality	489	7.2%
Sitka, City and Borough	3,678	6.9%
Aleutians West Census Area	1,838	6.4%
Bethel Census Area	7,939	6.3%
Northwest Arctic Borough	2,992	5.7%
Nome Census Area	4,336	4.6%
North Slope Borough	3,305	3.7%
Total	**311,523**	**15.7%**

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

While the likelihood of using an alternative commute, called "other means" in the commuter data — is about the same everywhere, the methods used differ in Alaska as well. Depending on where in the state someone lives, other transportation includes airplanes, boats, and snowmachines — transport seldom seen elsewhere.

In other states, common "other" methods include motorcycles, taxis, and rideshare services such as Uber and Lyft.

Commutes are longer in most other states

About three-quarters of commuters nationwide head to work before 9 a.m., and the departure patterns look similar for Alaska and the nation, with one exception. A larger percentage nationally leave half an hour earlier — between 7 and 7:30 — likely because commutes are longer in the Lower 48, and on average, people need more time during the morning rush hour. Alaskans were more likely to leave for work between 7:30 and 8 a.m.

Similarly, the average one-way commute in Alaska is about seven minutes shorter. The typical drive to work takes 19.5 minutes in Alaska and 26.8 nationwide. About a quarter of Alaskan commuters get to work in less than 10 minutes, however, while national commuters are roughly half as likely to make that time.

It's probably not surprising, given the amount of traffic and longer commutes from the suburbs, that New Yorkers had the longest average commute followed by workers in Maryland, New Jersey, and Washington, D.C. All exceeded half an hour. Alaska's commutes were among the shortest, just over Nebraska, Montana, Wyoming, and the Dakotas.

Mat-Su commute tops even the U.S. average

Within Alaska, commutes varied significantly, but in general, places on the road system took longer. Mat-Su's commute was longest at about 36 minutes, well above average for the state and the U.S. That's because so many working Mat-Su residents drive to Anchorage. The relationship between Anchorage and Mat-Su is like many in the Lower 48, where people often live in a suburb and work in the city.

Mat-Su commuters and where they work

Mat-Su not only has the longest commute, but it also has the largest share of its workers commuting to other parts of the state. Eighty-four percent of Alaskans live and work in the same area, but it's only 58

Continued on page 22

Mat-Su-Anchorage commuters by industry

Industry, 2021	Workers	Percent
Health Care and Social Assistance	2,146	16.8%
Construction	1,667	13.0%
Transportation and Warehousing	1,214	9.5%
State Government	1,179	9.2%
Retail Trade	1,013	7.9%
Professional, Scientific, and Technical Services	782	6.1%
Local Government	704	5.5%
Accommodation and Food Services	686	5.4%
Admin/Support, Waste Mgmt, and Remediation Svcs	612	4.8%
Wholesale Trade	439	3.4%
Information	394	3.1%
Finance and Insurance	373	2.9%
Other Services (except Public Administration)	368	2.9%
Real Estate and Rental and Leasing	244	1.9%
Mining, Quarrying, and Oil and Gas Extraction	214	1.7%
Arts, Entertainment, and Recreation	185	1.4%
Manufacturing	163	1.3%
Utilities	137	1.1%
Educational Services	111	0.9%
Management of Companies and Enterprises	101	0.8%
Agriculture, Forestry, Fishing ,and Hunting	41	0.3%
Unknown	7	0.1%

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

Average commute by state, in minutes

State	Commute, minutes
New York	33.3
Maryland	32.5
New Jersey	31.5
District of Columbia	30.4
Massachusetts	29.6
California	29.5
Illinois	28.7
Georgia	28.6
Virginia	28.2
Florida	27.9
Washington	27.7
New Hampshire	27.1
Pennsylvania	26.9
Hawaii	26.8
U.S. average	**26.8**
Texas	26.6
Connecticut	26.5
West Virginia	26
Delaware	26
Louisiana	25.9
Colorado	25.8
Arizona	25.7
Tennessee	25.5
Mississippi	25.4
South Carolina	25.3
Rhode Island	25.3
Alabama	25.2
North Carolina	25
Nevada	24.7
Michigan	24.5
Maine	24.3
Indiana	23.9
Missouri	23.8
Ohio	23.7
Kentucky	23.7
Oregon	23.7
Minnesota	23.5
Vermont	23.3
New Mexico	22.9
Wisconsin	22.2
Oklahoma	22.2
Arkansas	22
Utah	22
Idaho	21.2
Iowa	19.6
Kansas	19.6
Alaska	**19.5**
Nebraska	19.1
Montana	18.6
Wyoming	18.1
North Dakota	17.6
South Dakota	17.4

Source: U.S. Census Bureau, American Community Survey, 2017-2021

How teachers' wages compare

Alaska was 10th in 2022, down from the '80s and '90s

Average teacher pay by state, 2022

	State	Wage
1	New York	$92,222
2	Massachusetts	$88,903
3	California	$87,275
4	District of Columbia	$82,523
5	Washington	$81,586
6	Connecticut	$81,185
7	New Jersey	$79,045
8	Rhode Island	$76,852
9	Maryland	$75,766
10	**Alaska**	**$73,722**
11	Illinois	$72,301
12	Pennsylvania	$72,248
13	Oregon	$69,671
14	Minnesota	$68,491
15	Hawaii	$67,000
	United States	**$66,397**
16	Delaware	$65,647
17	Michigan	$65,198
18	Ohio	$63,153
19	Vermont	$62,866
20	New Hampshire	$62,783
21	Georgia	$61,249
22	Wyoming	$60,820
23	Wisconsin	$60,453
24	Virginia	$59,965
25	Iowa	$59,262
26	Texas	$58,887
27	Maine	$58,757
28	Utah	$58,619
29	Colorado	$58,481
30	Nevada	$57,804
31	Nebraska	$57,420
32	Alabama	$55,834
33	North Dakota	$55,769
34	Kansas	$54,815
35	Oklahoma	$54,804
36	Arizona	$54,580
37	Kentucky	$54,574
38	New Mexico	$54,272
39	Idaho	$54,232
40	Indiana	$54,126
41	North Carolina	$53,644
42	Montana	$53,628
43	Tennessee	$53,619
44	South Carolina	$53,393
45	Arkansas	$52,486
46	Missouri	$52,481
47	Louisiana	$52,376
48	Florida	$51,230
49	West Virginia	$50,315
50	South Dakota	$49,761
51	Mississippi	$47,162

Source: The National Center for Education Statistics

By JOSHUA WARREN

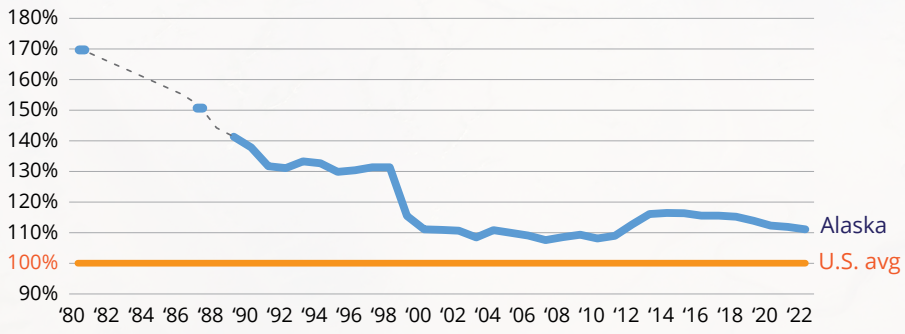
In the 1980s and '90s, Alaska had a distinct competitive advantage when recruiting teachers. In addition to offering natural beauty, recreation, and adventure, Alaska had the highest average salary in the country for K-12 teachers.

In 1980, Alaska teachers made 170 percent of the national average for teachers (see the graph below), which made recruiting easy despite the higher cost of living and, sometimes, the adjustment to remote rural life. In the decades since, Alaska has fallen closer to the national average while some states have increased their teacher pay in comparison.

The 2022 rankings at left list New York as the top-paying state for teachers, with an average salary of nearly 140 percent of the U.S. average. When Alaska was paying 170 percent in 1980, New York was paying 124 percent.

Alaska ranked 10th last year at 111 percent, a percentage the state has hovered around since the late 1990s. Alaska's average wages for teachers dropped sharply in the late 1990s, as the graph below shows. Amid sweeping budget cuts, the state offered teachers an early retirement incentive, which included dropping the required years of service from 20 to 17. Many highly paid, experienced teachers in Alaska accepted that offer and were replaced with lower-paid new teachers, which brought the average down.

Alaska's teacher wage premium over U.S.



Note: Data were unavailable for 1981 through 1986 and 1988.

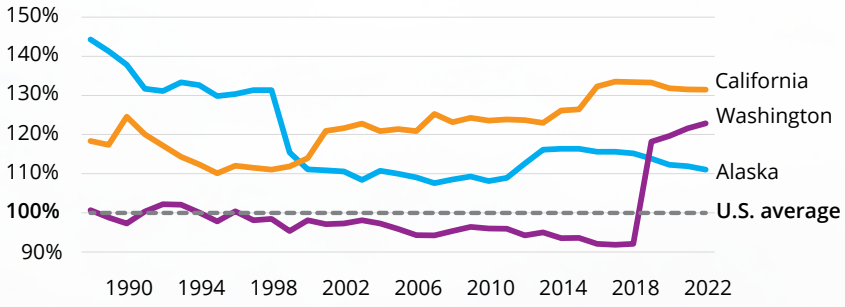
Source: The National Center for Education Statistics

Two neighboring states pay more

Two of the states that have surpassed Alaska are among our closest neighbors: Washington and California.

As shown at right, California has topped Alaska for more than 20 years, and Washington jumped ahead of Alaska five years ago after decades of low pay that usually fell below the U.S. average.

Teachers lost wage ground to nearby states



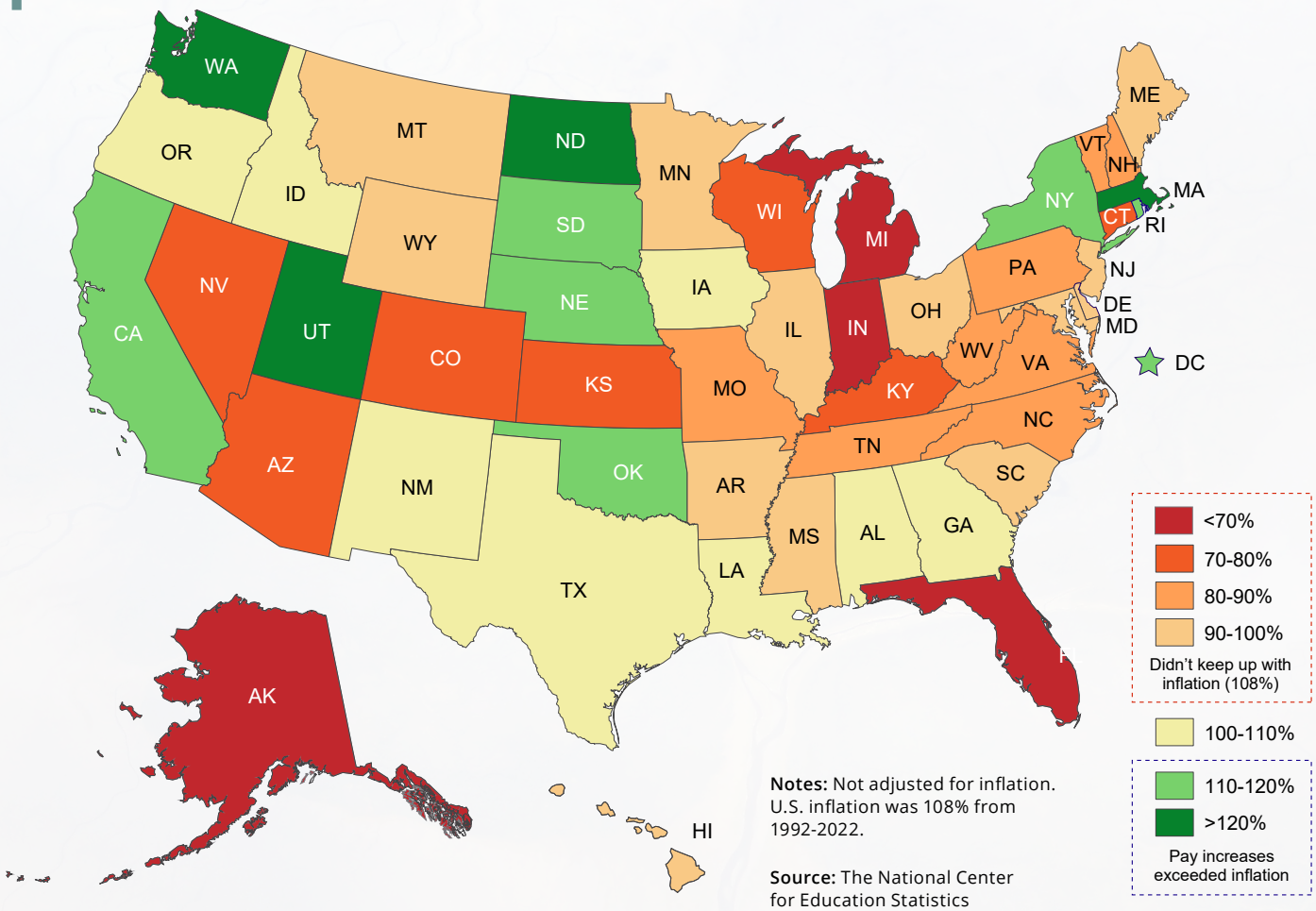
Source: The National Center for Education Statistics

Washington's wage spike in the late 2010s came after the Washington Supreme Court ruled in 2012 that the state wasn't adequately funding education. After several years of wrangling, that resulted in big increases in teacher salaries in 2018 and smaller increases in subsequent years.

Inflation-adjusted pay has fallen

Inflation has also taken its toll, and inflation-adjusting salaries over the last few decades shows teachers in about half of all states, including Alaska, have lost ground.

Growth in teachers' wages by state from 1992 to 2022



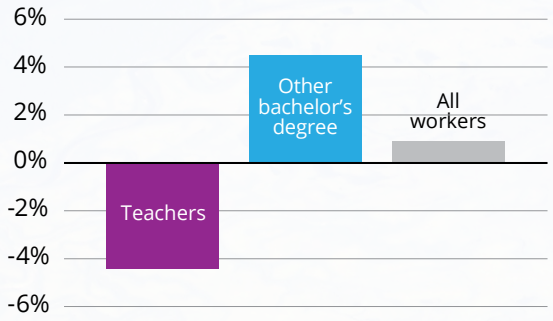
Notes: Not adjusted for inflation. U.S. inflation was 108% from 1992-2022.

Source: The National Center for Education Statistics

National inflation over the last three decades was 108 percent, and as the map on the previous page shows, all of the states in orange and red fell below inflation for their increases in average teacher pay. Alaska is one of four states that increased teachers' wages by less than 70 percent over those 30 years.

Adjusting wages for inflation over the last *two* decades (based on Alaska's urban consumer price index) shows real wages grew 1 percent for all workers in Alaska and nearly 5 percent for those with bachelor's degrees who were not teachers. (See the chart on the right.) Teachers' average inflation-adjusted wages fell more than 4 percent over those 20 years.

Adjusted wages for teachers declined from 2002 to 2022



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

Newer teachers earn less over the course of their careers

The difference is more pronounced for newer teachers. Those who began teaching in the 2020s, and even in the 2010s, started their careers earning less than their counterparts who started teaching in the early 2000s.

New teachers — for this article, those who began in fiscal year 2020 — started at least 3 percent lower than those in the past, and that pay gap has expanded over time, leaving those just entering the profession falling further behind their more experienced counterparts. (See the graph below.)

At the 10-year mark, educators who began in fiscal year 2012 were about $2,000 per year behind those who started in 2000 at their 10-year mark. To match their predecessors' wages by the time they reach 20 years of service, the 2012 starters would need more than an 18 percent pay increase, which would be counter to the wage trend of their predecessors' second decade.

> Educators who began in 2012 are about $2,000 a year behind those who started 10 years earlier.

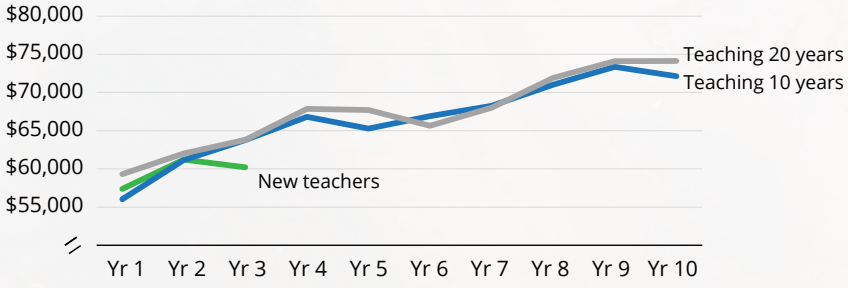
Teachers leaving faster than they can be replaced

In the 2000s, about 8,000 people worked as teachers each year in Alaska, peaking at 8,232 in 2002. That level held for a decade, but since 2013, the number has steadily decreased. By 2022, the teacher count was down 16 percent from 2002, to 6,916.

Enrollment also fell over that period as the state's school-age population declined. (See the March 2020 issue of *Trends*.) Total public school enrollment dropped 4.2 percent, from 133,105 in 2002 to 127,509 in 2022.

Teaching has always seen a lot of churn. At the peak in 2006, for example, 1,508 people taught who didn't the following year. Offsetting most of that loss, 1,248 *started* teaching that year. But while the number of

Wage growth for new teachers, predecessors



Note: Wages are inflation-adjusted to 2022 dollars.

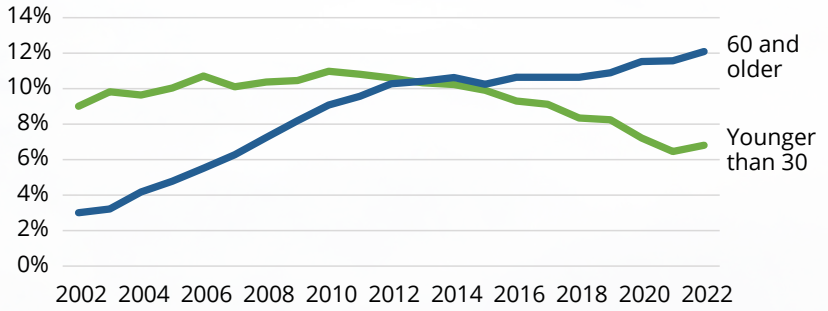
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

Alaska teachers leaving each year has decreased, even fewer have entered the occupation each year.

Those who stop teaching have also become more likely to leave education altogether. In 2017, over 20 percent who quit teaching took another education-related job. In 2022, it was only about 15 percent.

As the pie chart below shows, a large group who stopped teaching last year left Alaska, and some likely left to teach elsewhere. These former teachers were not Alaska residents as of 2022 and were no longer earning a regular paycheck in Alaska.

Fewer young teachers, more near retirement

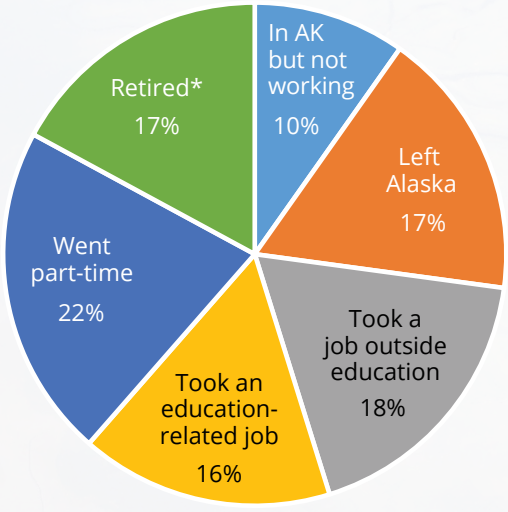


Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

More retention and fewer younger teachers

Since 2012, the percentage of all teachers who were in their first year has gradually fallen. Over that period, the share with more than 10 years of experience has grown.

Where did the Alaska teachers who quit teaching in 2022 go?



Notes: Retired means at least 58 years old and not teaching. Residents not working did not show up in wage records, but they could be self-employed.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

Alaska teacher retention has improved in recent years. In 2016, over 40 percent of the teachers who started that year were already gone the next. In 2021, about 75 percent of the new teachers taught again the following year. That time frame saw less hiring and less movement in general, though — partly because of the pandemic — which would increase retention regardless of other factors.

A unique retirement system

Alaska's retirement system for new public teachers is unique among states, and Alaska is the only state that no longer offers new teachers some type of defined benefit retirement system.

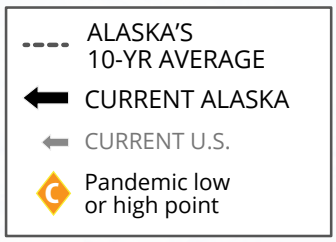
Since 2006, new Alaska teachers have been automatically entered into a defined contribution retirement plan. Upon retirement, they have an investment account to manage and use how they want. While this offers the most flexibility for their accumulated savings, it puts all the investment risk on the employee. The money can also run out during retirement.

Under a defined benefit plan, the employee gets a guaranteed monthly check for life and often some support for a surviving spouse. This shifts most of the actuarial and investment risk to the employer.

Most states offer teachers only a defined benefit plan while a few offer a hybrid or a choice between the two systems. Offering only a defined contribution retirement plan can affect retention as well as recruitment. A defined contribution plan like Alaska's gives teachers the flexibility to take out all of what they and their employers have contributed after vesting in just five years.

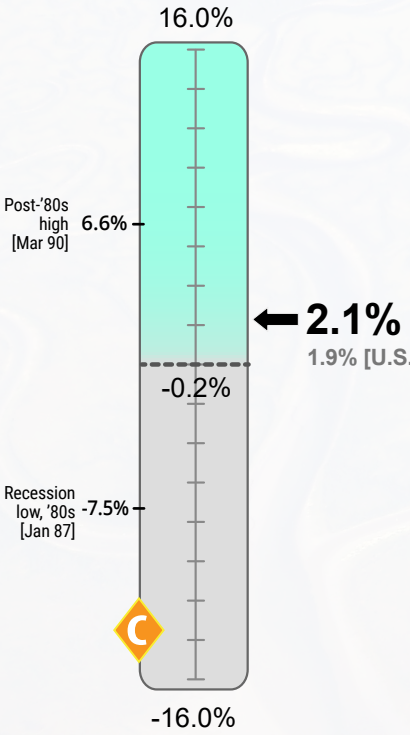
Continued on page 22

Gauging The Economy



Job Growth

October 2023
Over-the-year percent change



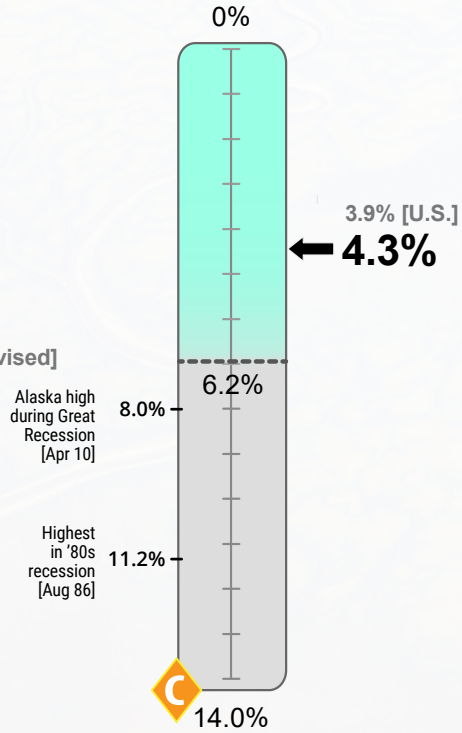
Alaska's October employment was 2.1 percent above last October but still 1.7 percent below October 2019, an important reference point because that was a pre-pandemic employment level.

National employment, which was up 1.9 percent from October 2022, was 3.6 percent above its October 2019 level.

In other words, while the U.S. economy has fully recovered from COVID-related job losses, Alaska still has a ways to go.

Unemployment Rate

October 2023
Seasonally adjusted

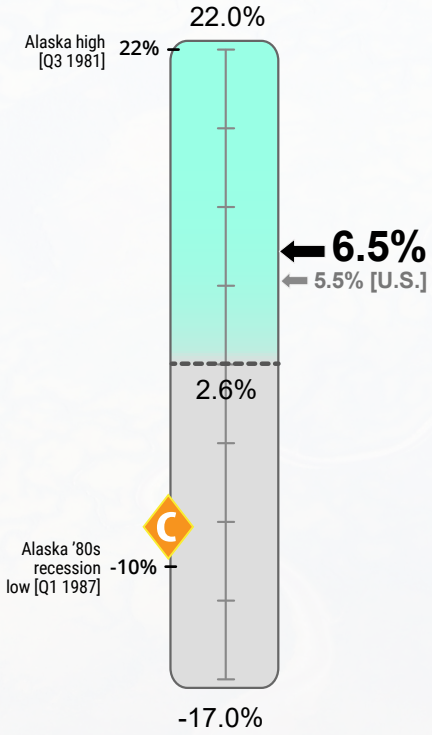


Alaska's unemployment rate has been less useful as an economic measure during the pandemic and its aftermath because of data collection difficulties.

It's clear, however, that unemployment rates in Alaska and the U.S. are historically low and that the shortage of workers is a bigger economic challenge than unemployment.

Wage Growth

2nd Quarter 2023
Over-the-year percent change



After falling hard during the pandemic, total wages paid by Alaska employers have bounced back and show strong growth.

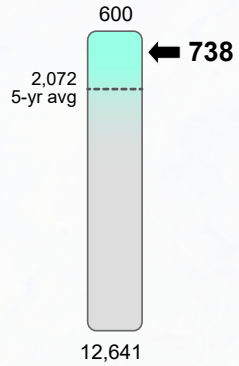
Wages were up 6.5 percent from year-ago levels in the second quarter of 2023 and 19.0 percent above first quarter 2019.

Gauging The Economy

ALASKA'S 10-YR AVERAGE
CURRENT ALASKA

Initial Claims

Unemployment, week ending Nov. 4, 2023*

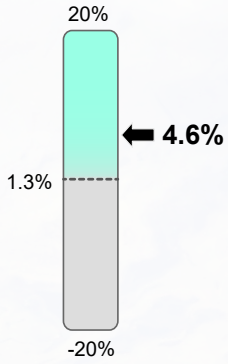


Unemployment claims jumped during the pandemic as many businesses shut down or limited services. Pandemic-driven claims loads have fallen, and new claims for benefits are well below their long-term average.

*Four-week moving average ending with specified week

GDP Growth

1st Quarter 2023
Over-the-year percent change*

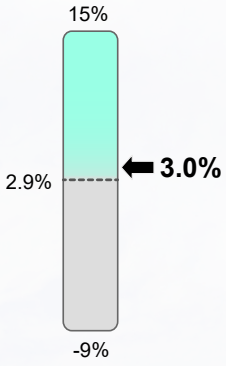


Gross domestic product is the value of the goods and services a state produces. It's an important economic measure but also a volatile one for Alaska because commodity prices influence the numbers so much — especially oil prices.

*In current dollars

Personal Income Growth

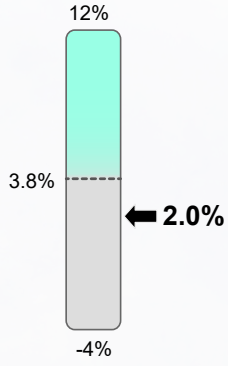
2nd Quarter 2023
Over-the-year percent change



Personal income consists of three main parts: 1) wages and salaries; 2) dividends, interest, and rents; and 3) transfer payments (payments from governments to individuals).

Change in Home Prices

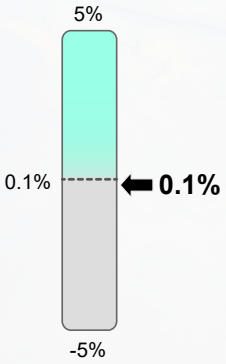
Single-family, percent change from prior year, Q2 2023



Home prices shown include only those for which a commercial loan was used. This indicator tends to be volatile from quarter to quarter.

Population Growth

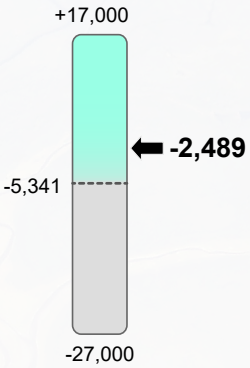
2021 to 2022



After four years of decline, Alaska's population grew slightly in 2021 and 2022, as natural increase (births minus deaths) slightly exceeded losses from migration.

Net Migration

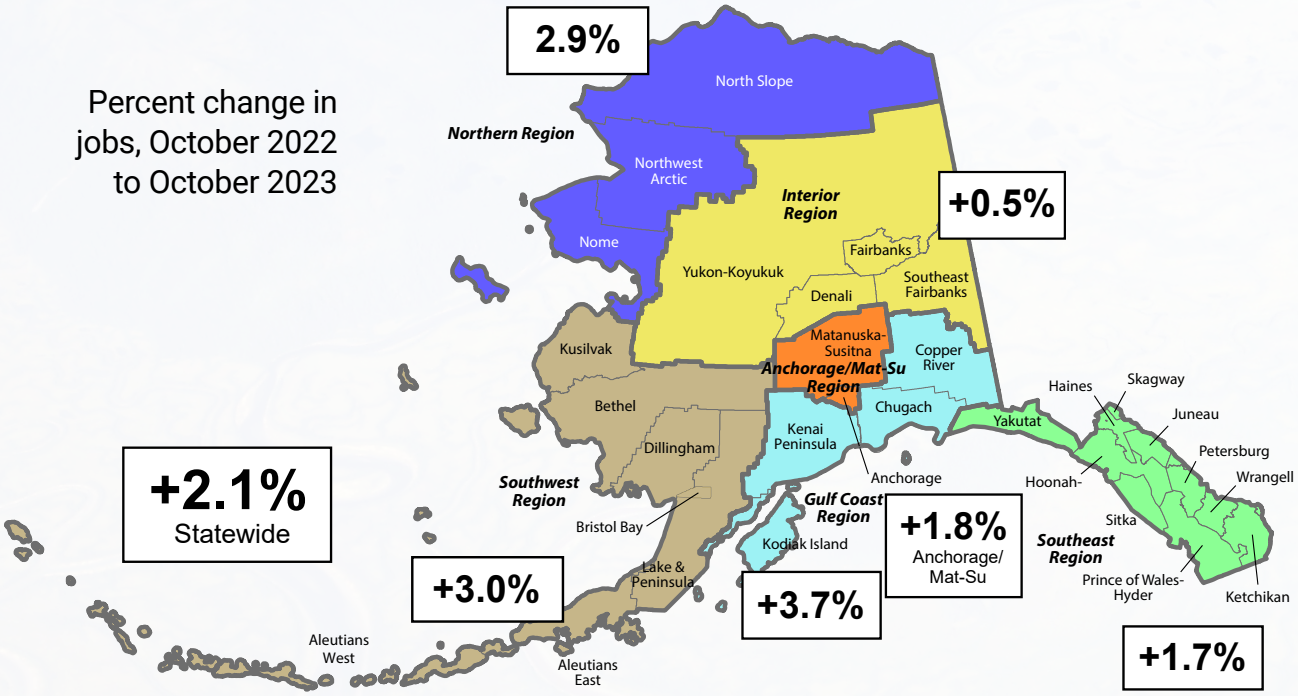
2021 to 2022



The state had net migration losses for the tenth consecutive year in 2022, although the losses have become smaller. Net migration is the number who moved to Alaska minus the number who left.

Employment by Region

Percent change in jobs, October 2022 to October 2023



Unemployment Rates

Seasonally adjusted

	Prelim.	Revised	
	10/23	9/23	10/22
United States	**3.9**	**3.8**	**3.7**
Alaska	**4.3**	**4.1**	**3.8**

Not seasonally adjusted

	Prelim.	Revised	
	10/23	9/23	10/22
United States	**3.6**	**3.6**	**3.4**
Alaska	**4.1**	**4.0**	**3.3**

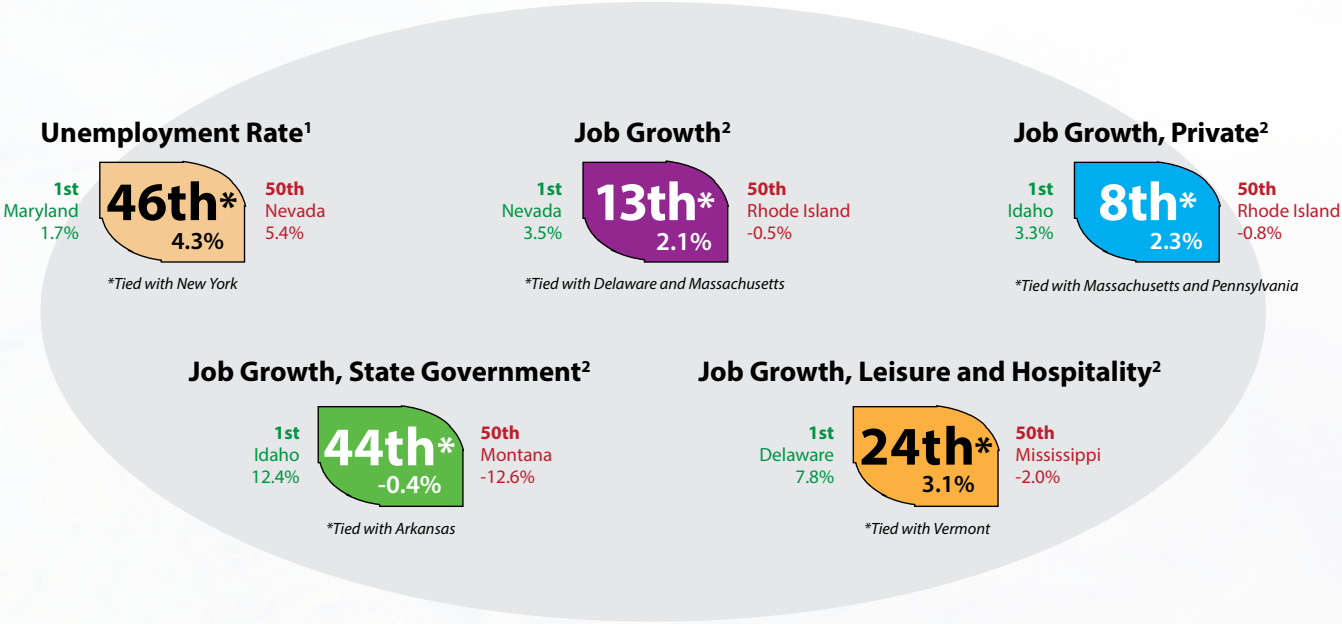
Regional, not seasonally adjusted

	Prelim.	Revised	
	10/23	9/23	10/22
Interior Region	**4.1**	**3.8**	**3.3**
Denali Borough	9.5	2.9	8.4
Fairbanks N Star Borough	3.6	3.5	3.0
Southeast Fairbanks Census Area	5.4	5.0	3.7
Yukon-Koyukuk Census Area	9.3	8.7	6.0
Northern Region	**7.0**	**7.1**	**5.5**
Nome Census Area	7.2	7.3	5.0
North Slope Borough	5.1	5.3	4.4
Northwest Arctic Borough	9.0	8.9	7.5
Anchorage/Mat-Su Region	**3.6**	**3.7**	**2.9**
Anchorage, Municipality	3.4	3.5	2.7
Mat-Su Borough	4.3	4.3	3.6

	Prelim.	Revised	
	10/23	9/23	10/22
Southwest Region	**8.0**	**7.6**	**5.9**
Aleutians East Borough	2.4	2.0	2.0
Aleutians West Census Area	4.0	3.0	3.8
Bethel Census Area	9.6	9.9	7.1
Bristol Bay Borough	4.8	4.4	3.6
Dillingham Census Area	7.4	6.9	5.4
Kusilvak Census Area	14.3	14.5	9.5
Lake and Peninsula Borough	6.1	5.0	5.2
Gulf Coast Region	**4.7**	**4.1**	**3.8**
Kenai Peninsula Borough	4.5	4.2	3.8
Kodiak Island Borough	4.3	3.9	3.2
Chugach Census Area	6.2	3.4	3.2
Copper River Census Area	7.5	5.8	9.3

	Prelim.	Revised	
	10/23	9/23	10/22
Southeast Region	**3.6**	**3.3**	**2.9**
Haines Borough	6.3	4.7	5.1
Hoonah-Angoon Census Area	4.1	3.1	3.9
Juneau, City and Borough	3.0	2.9	2.3
Ketchikan Gateway Borough	3.3	3.2	3.0
Petersburg Borough	4.9	4.2	3.7
Prince of Wales-Hyder Census Area	6.3	5.7	4.2
Sitka, City and Borough	3.0	2.7	2.3
Skagway, Municipality	4.5	1.8	6.2
Wrangell, City and Borough	4.6	4.4	3.7
Yakutat, City and Borough	5.4	5.2	4.2

How Alaska Ranks



Note: State government employment includes the University of Alaska.
[1]October seasonally adjusted unemployment rates
[2]October employment, over-the-year percent change

Sources: U.S. Bureau of Labor Statistics; and Alaska Department of Labor and Workforce Development, Research and Analysis Section

Other Economic Indicators

	Current		Year ago	Change
Urban Alaska Consumer Price Index (CPI-U, base yr 1982=100)	257.938	1st half 2023	252.271	+2.2%
Commodity prices				
Crude oil, Alaska North Slope,* per barrel	$90.48	Oct 2023	$93.06	-2.8%
Natural gas, Henry Hub, per thousand cubic feet (mcf)	$3.15	Oct 2023	$6.09	-48.2%
Gold, per oz. COMEX	$1,992.80	11/22/2023	$1,754.80	+13.6%
Silver, per oz. COMEX	$24.03	11/22/2023	$21.23	+13.2%
Copper, per lb. COMEX	$3.81	11/22/2023	$3.61	+5.4%
Zinc, per lb.	$1.15	11/23/2023	$1.32	-12.9%
Lead, per lb.	$1.00	11/23/2023	$0.96	+4.2%
Bankruptcies	48	Q3 2023	54	-11.1%
Business	7	Q3 2023	3	+133.3%
Personal	41	Q3 2023	51	-19.6%
Unemployment insurance claims				
Initial filings	4,923	Oct 2023	5,129	-4.0%
Continued filings	20,582	Oct 2023	19,637	4.8%
Claimant count	4,807	Oct 2023	4,944	-2.8%

*Department of Revenue estimate

Sources for this page and the preceding three pages include Alaska Department of Labor and Workforce Development, Research and Analysis Section; U.S. Bureau of Labor Statistics; U.S. Bureau of Economic Analysis; U.S. Energy Information Administration; Kitco; U.S. Census Bureau; COMEX; NASDAQ; Alaska Department of Revenue; and U.S. Courts, 9th Circuit

TEACHERS

Continued from page 17

Public employees in Alaska and 14 other states also opted out of Social Security in favor of their own retirement systems. Not paying into Social Security adds another layer to Alaska's lack of a defined benefit plan, making Alaska the only state that doesn't offer at least some low-risk guaranteed retirement to its newer teachers.

The nationwide challenge in recruiting and keeping teachers

Looking at how teaching in Alaska has changed over the decades and how we compare to other states can shed light on Alaska's relative strengths and weaknesses. Difficulty recruiting new teachers is a national phenomenon, one that has led some states to relax the requirements to lead a classroom.

Compounding the staffing challenge in Alaska is that nearly an eighth of teachers are older than 60, and the number of teachers younger than 30 is the lowest in more than 20 years, as the graph on page 17 shows.

With teachers in such demand everywhere and so many near retirement, an additional option for Alaska is to recruit from the state's large supply of former teachers: more than 2,600 people have taught in the past 10 years, are younger than 58, and are still working in Alaska but in a different profession.

Multiple national sources have looked at factors that might lead teachers to leave the profession or dissuade students from choosing it as a career. They show that many challenges teachers report aren't unique to Alaska.

The research firm Rand Corporation, for example, found complaints about lower morale and well-being during the pandemic, racial discrimination, and poor working conditions.

Rand also estimated teacher burnout at almost 60 percent, which was consistent across the three years they conducted the survey (2021, 2022, and 2023). The causes listed were managing student behavior, taking on extra work because of staff shortages, and feeling like goals and expectations at their schools are unattainable.

The EdWeek Research Center found that teacher satisfaction had fallen from a high of 62 percent in 2008 to just 20 percent in 2023. The share who said they were very likely or fairly likely to leave the occupation also went up considerably.

In 2022, Gallup found that K-12 workers had the highest job burnout rate in the U.S. — this poll estimated it at 44 percent — and the gap from other professions had increased.

Other reported issues included a lack of administrative support, new unfunded mandates, less support staff, constantly changing education policies, lack of respect, health and safety concerns, political attacks, too-large classrooms, inadequate planning time, and the fact that the pandemic exacerbated all of these problems.

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COMMUTERS

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percent for the Mat-Su Borough.

Among Mat-Su's 45,000 employed residents, 28 percent work in Anchorage and 5 percent commute to the North Slope, usually for high-paying jobs in the oilfields. The rest work in Fairbanks or other areas.

Fewer Mat-Su residents commute than they did before the pandemic, however. In 2019, it was 44 percent, with 29 percent working in Anchorage and 6 percent on the Slope.

Among Mat-Su residents commuting to Anchorage, the largest percentage worked in the health care industry (just under 17 percent), followed by construction at 13 percent. Of the health care industry commuters, registered nurses made up nearly 20 percent followed by personal care aides at 5.4 percent and nursing assistants at 4.4 percent.

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