Bureau of Highway Safety Fatality Analysis 2018-2022

June 28, 2024

Prepared for the Bureau of Highway Safety

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SURVEY RESEARCH CENTER

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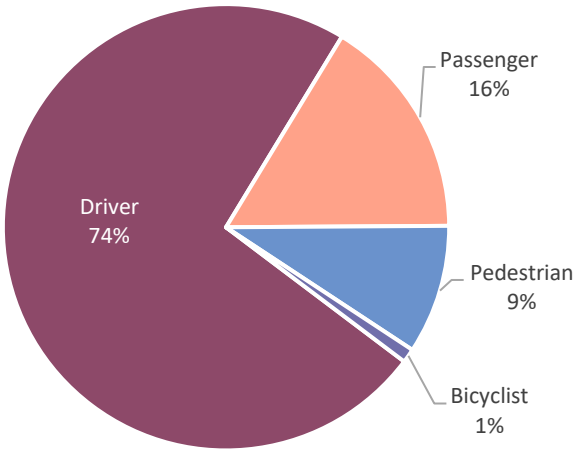
Fatalities

This report summarizes the findings from an analysis of highway fatalities from 2018 to 2022. The dataset used for analysis contained a total of 1581 records, each representing an individual involved in a fatal crash. In total, there were 726 fatal crashes during this 5-year time span and 790 fatalities. On average, there were 158 fatalities per year, ranging from a low of 136 in 2018 to a high of 182 in 2022.

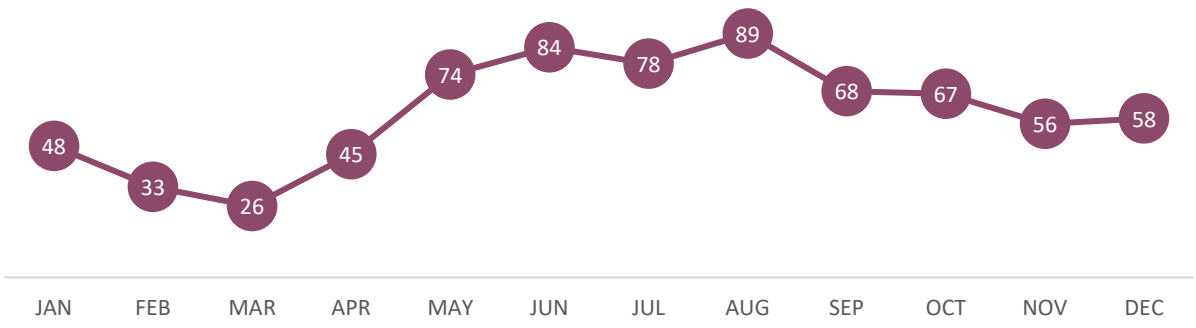
Fatalities by Person Type



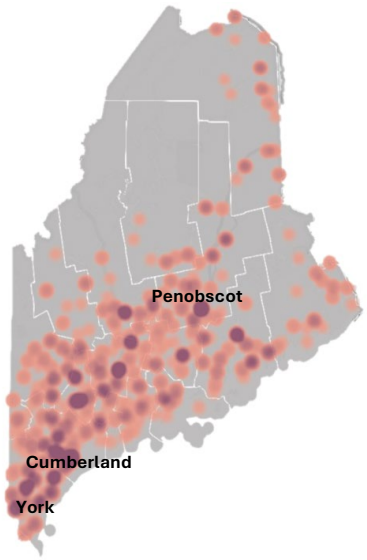
A total of 790 drivers, passengers, bicyclists, and pedestrians lost their lives as a result of highway crashes from 2018 to 2022. The majority of these fatalities (74%) were driver fatalities, 16% were passenger fatalities, 9% were pedestrian fatalities, and the remaining 1% were bicyclist fatalities.

Fatal Crashes by Month

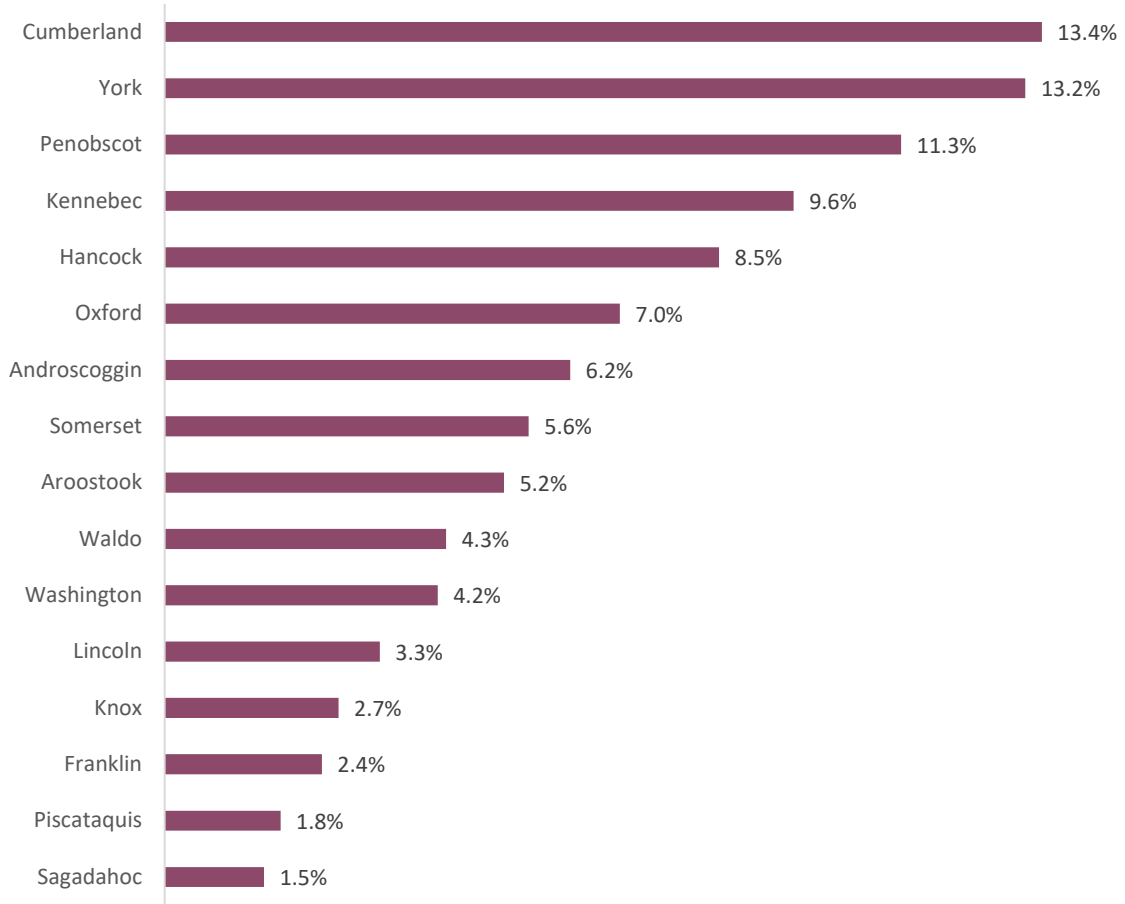
While Maine's roads are most dangerous during the winter months, a higher number of fatal crashes occur during the summer months. This may reflect a reduction in the number of miles driven during winter months and/or increased care taken by drivers when navigating during inclement weather. June through August make up one-quarter (25%) of the calendar year, but those months accounted for 35% of fatal crashes.



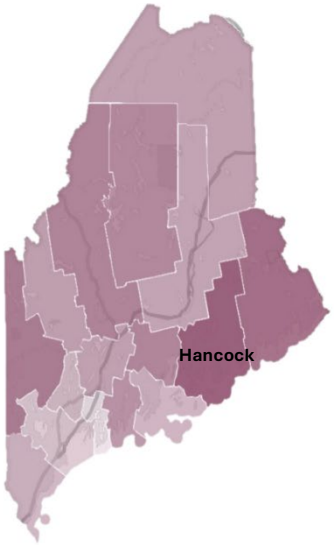
Fatalities by County



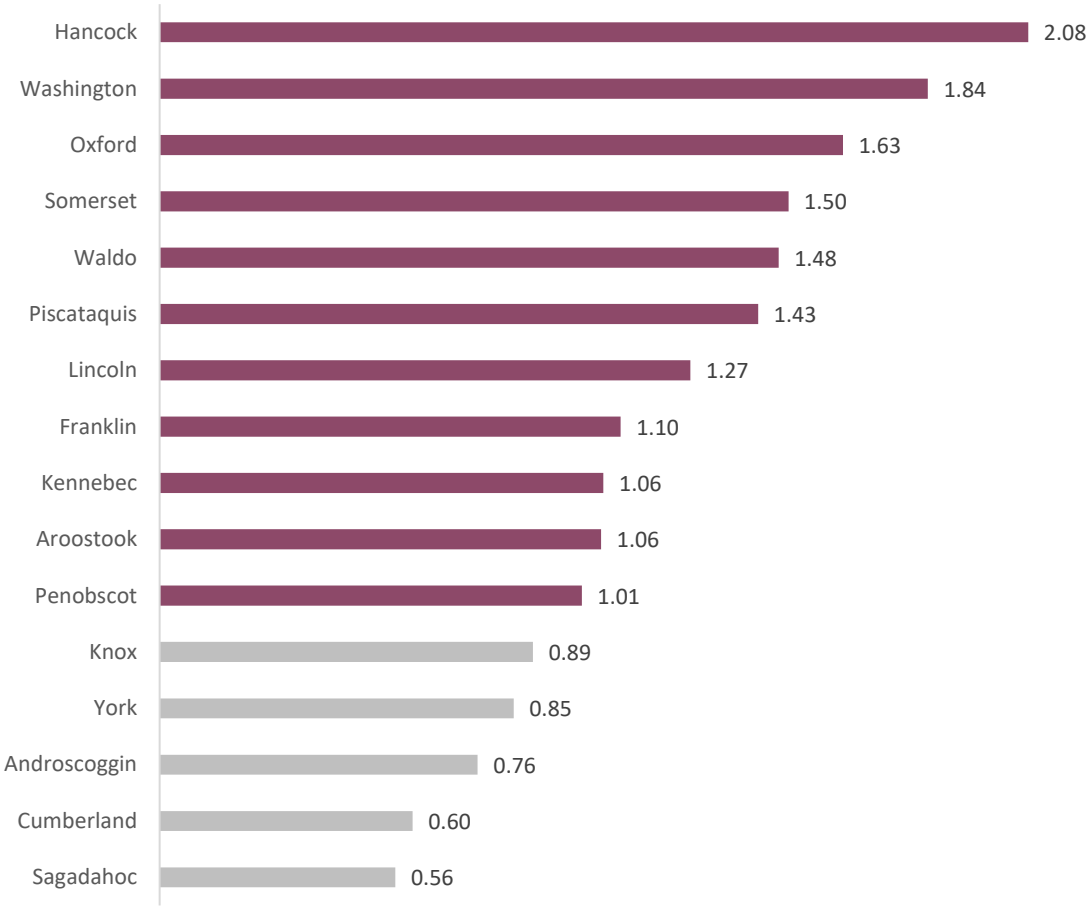
Approximately 13.4% of the 790 fatalities that occurred between 2018 and 2022 occurred in Cumberland County, followed by 13.2% in York County, and 11.3% in Penobscot County.



Fatalities by County, Relative Rate



Often, the highest rates of a given event are observed in the most populous counties. To identify disproportionate fatality rates, relative rates were computed by dividing the fatality rate of each county by its population rate. Hancock County, which held 4.09% of the population according to the last 5-year American Community Survey, had 8.48% of the fatalities between 2018 and 2022, resulting in a relative rate of 2.08. This rate is disproportionately high, as are the rates of all counties displayed in red below.

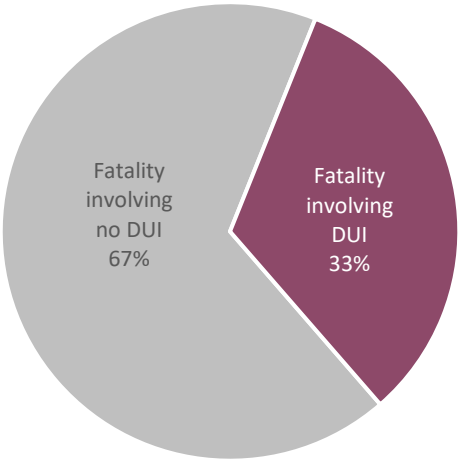


Impaired Driving

Summary

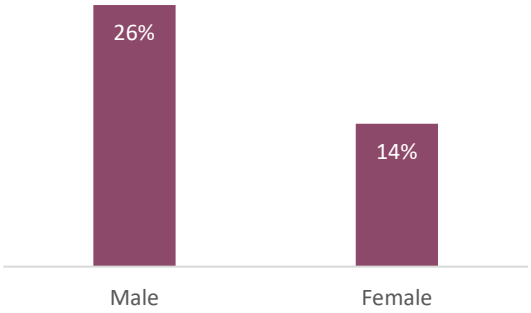
- There were 238 impaired-driving-related fatal crashes involving 241 impaired drivers between 2018 and 2022.
- There were 260 impaired-driving-related fatalities during this period.
- Thirty-three percent (33%) of all fatalities between 2018 and 2022 involved an impaired driver.
- Twenty-three percent (23%) of all drivers involved in fatal crashes between 2018 and 2022 were impaired.

Impaired-Driving-Related Fatalities



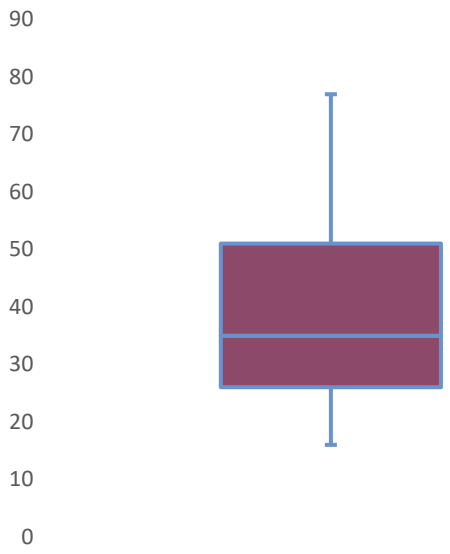
Approximately one-third (33%) of all fatalities involved an impaired driver. This proportion ranged from a low of 25% in 2021 to a high of 46% in 2022.

Impaired Driving and Sex



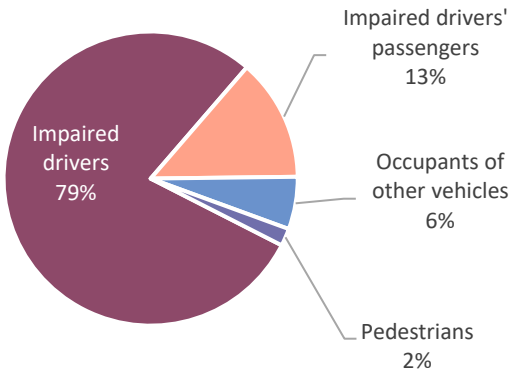
While 23% of all drivers involved in fatal crashes were operating under the influence, a higher proportion of male drivers involved in fatal crashes were operating under the influence (26%) compared to female drivers (14%).

Age of Impaired Drivers



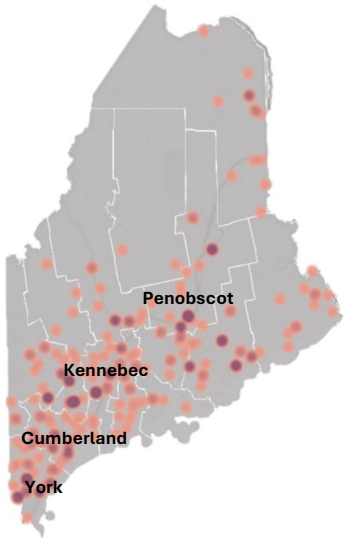
The median age of drivers operating under the influence in fatal crashes was 35, meaning half of the impaired drivers were younger than 35 and half were older. One-quarter of all drivers operating under the influence were between the ages of 16 and 25, and one-quarter were between the ages of 26 and 34. These are dense distributions compared to the remaining two quartiles, which together span the ages of 35 and 77; as such, the bottom two age quartiles might make good targets for public safety messages.

Impaired-Driving Fatalities by Person Type

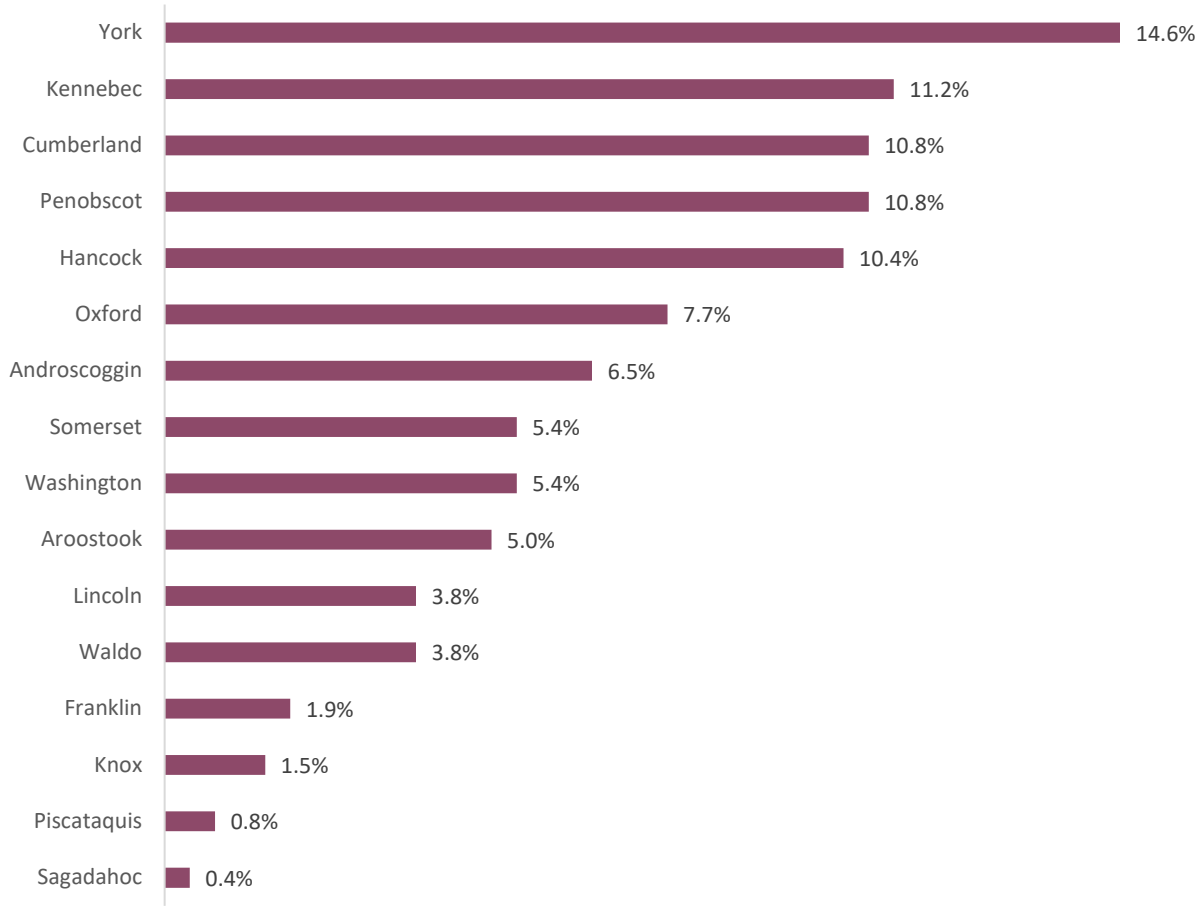


Crashes involving impaired driving resulted in 260 fatalities between 2018 and 2022. The majority of these fatalities (79%) involved the loss of life for the impaired driver. An additional 13% of fatalities involved the impaired drivers' passengers. This suggests that 92% of the risk associated with impaired driving is borne by impaired drivers and their passengers. An additional 8% of fatalities involved occupants of other vehicles and pedestrians.

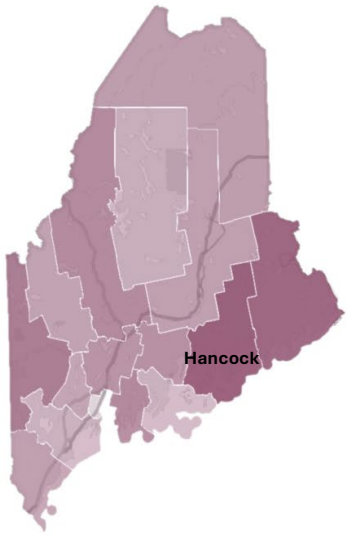
Impaired-Driving Fatalities by County



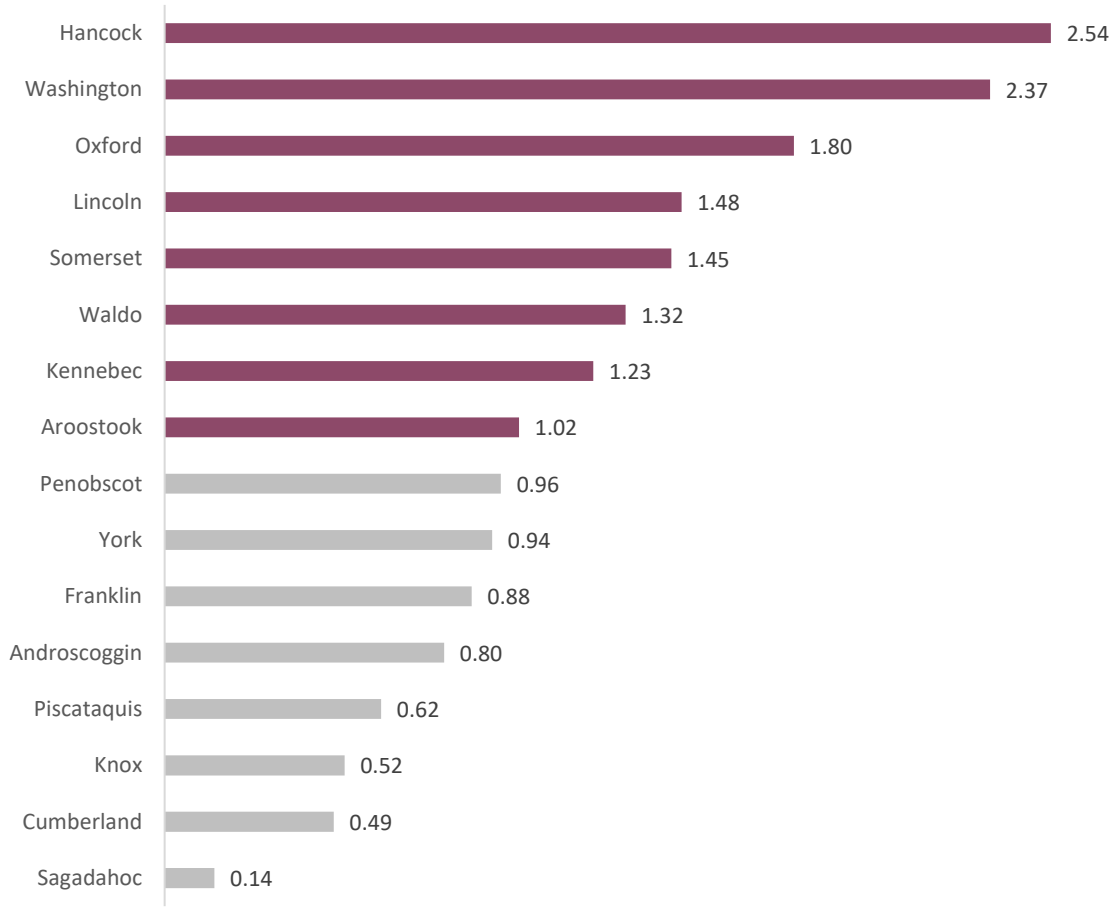
Approximately 14.6% of the 260 impaired-driving-related fatalities that occurred between 2018 and 2022 occurred in York County, followed by 11.2% in Kennebec County, and 10.8% each in Cumberland and Penobscot Counties.



Impaired-Driving Fatalities by County, Relative Rate



Often, the highest rates of a given event are observed in the most populous counties. To identify disproportionate driver impaired fatality rates, relative rates were computed by dividing the driver-impaired fatality rate of each county by its population rate. Hancock County, which held 4.09% of the population according to the last 5-year American Community Survey, had 10.38% of the driver-impaired fatalities between 2018 and 2022, resulting in a relative rate of 2.54. This rate is disproportionately high, as are the rates of all counties displayed in red below.

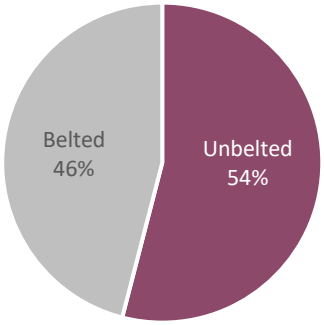


Occupant Protection

Summary

- More than half (54%) of the occupant fatalities who were required to be belted were not.
- About two-thirds (66%) of all those involved in fatal crashes (both fatalities and survivors) between 2018 and 2022 who were required to wear seat belts were wearing them while a little over a third (34%) were not.
- The proportion of occupants involved in fatal crashes who were wearing seat belts varied between a low of 60% in 2020 and a high of 71% in 2022.
- Sixty-three percent (63%) of males involved in fatal crashes between 2018 and 2022 were wearing seat belts while 72% of females were.

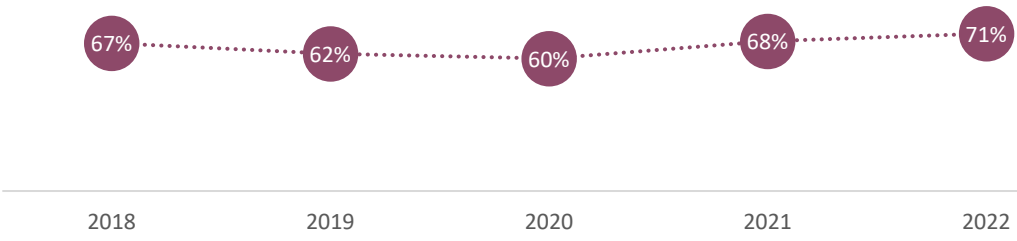
Unbelted Occupant Fatalities



More than half (54%) of the occupant fatalities who were required to be belted were not.

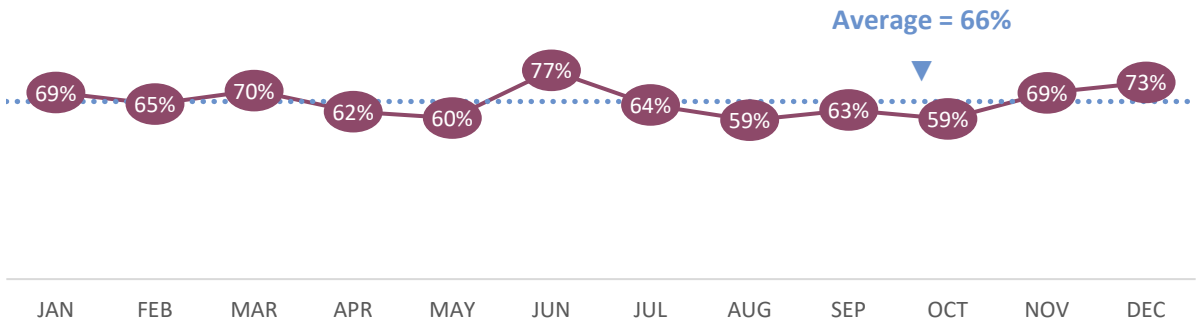
Seat Belt Use by Year

While 66% of occupants involved in fatal crashes (fatalities and survivors) between 2018 and 2022 who were required to wear seat belts were wearing them, that rate varied from one year to another. The lowest rate occurred in 2020, at 60%, while the highest occurred in 2022, at 71%.

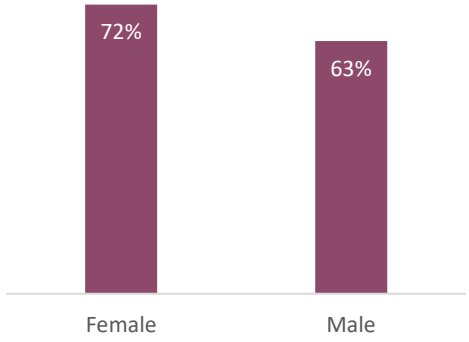


Seat Belt Use by Month

Seat belt use in fatal crashes varied slightly depending on time of year, ranging from a low of 59% in August AND October to a high of 77% in June.

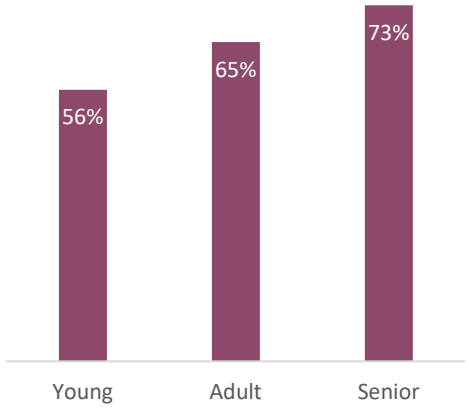


Seat Belt Use and Sex



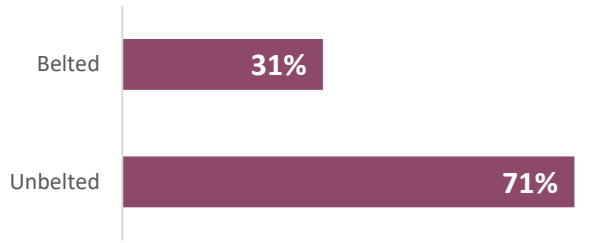
Seat belt use rate also varied depending upon occupant sex. Approximately 72% of females involved in fatal crashes were wearing seat belts compared to 63% of males involved in fatal crashes.

Seat Belt Use and Age



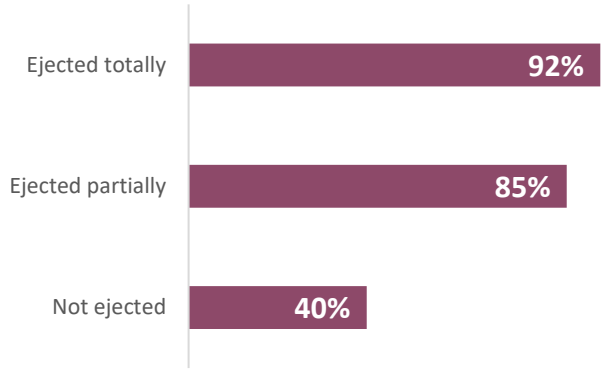
There were likewise differences in seat belt use by age. Approximately 56% of young occupants (those 12 to 20 years of age) involved in fatal crashes were wearing seat belts, compared to 65% of adults aged 21 to 64, and 73% of seniors, aged 65 and older.

Impact of Seat Belt Use on Fatalities



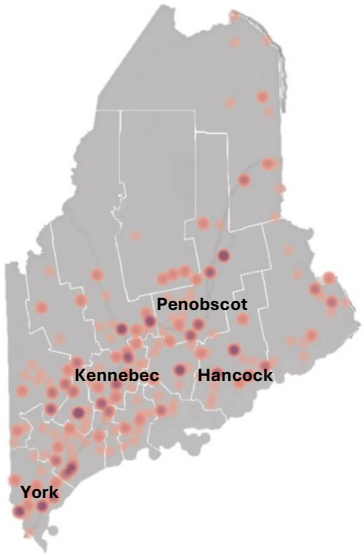
Approximately 45% of all people involved in fatal crashes between 2018 and 2022 who were required to wear seat belts died, but unbelted occupants died at more than double the rate (71%) of belted occupants (31%). Seat belt use may partially determine who does and does not die in a fatal crash.

Seat belt use saves lives in part by preventing occupants from being ejected during fatal crashes. Approximately 1% of those who were belted were partially or fully ejected from their vehicles, while 27% of those who were not belted were ejected.

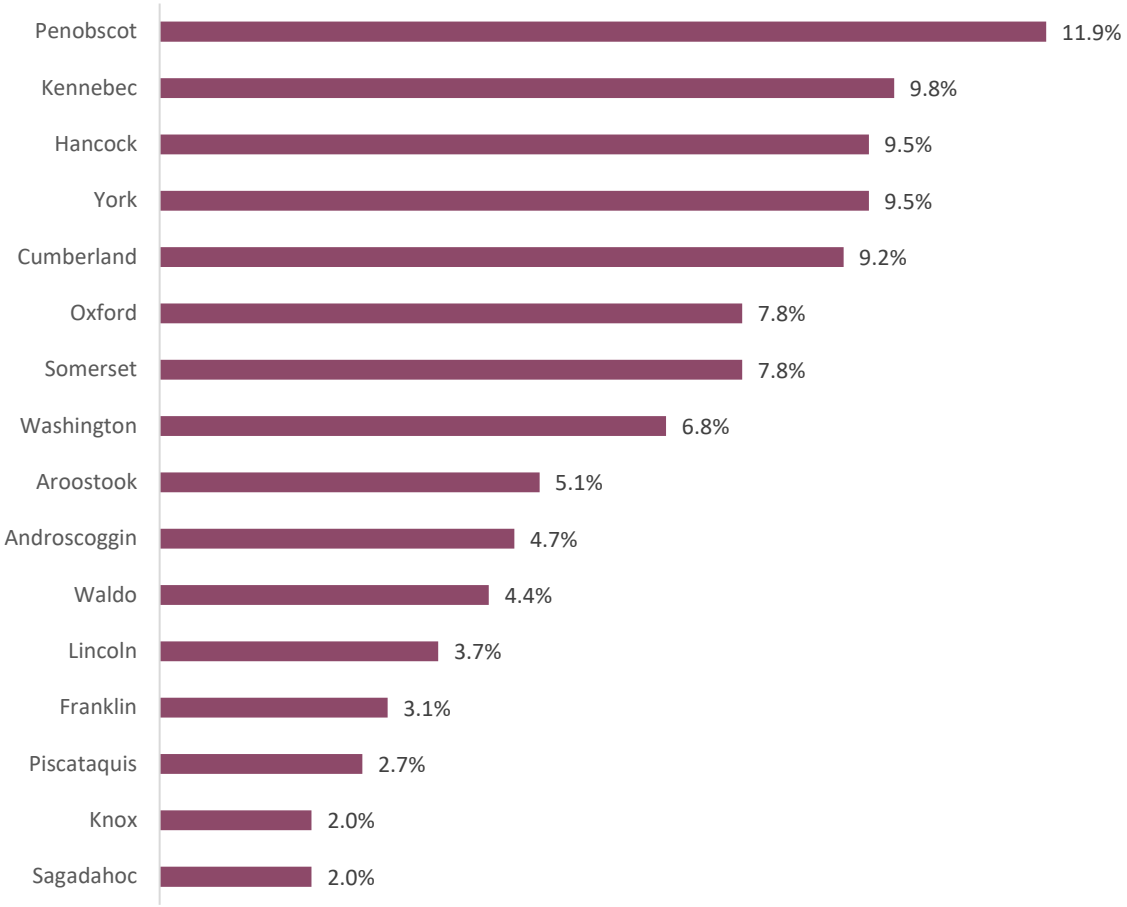


Ejection, in turn, results in a much higher probability of death. While 40% of those who were not ejected nevertheless died, the rates were much higher for those who were partially or totally ejected, at 85% and 92%, respectively.

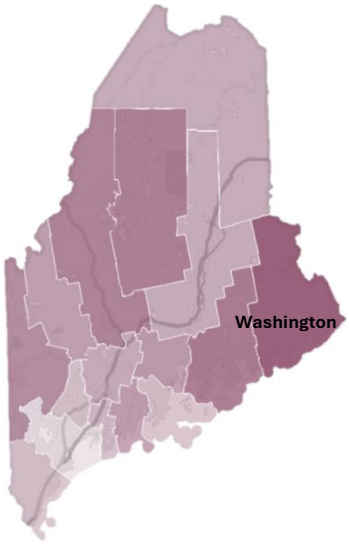
Unbelted Occupant Fatalities by County



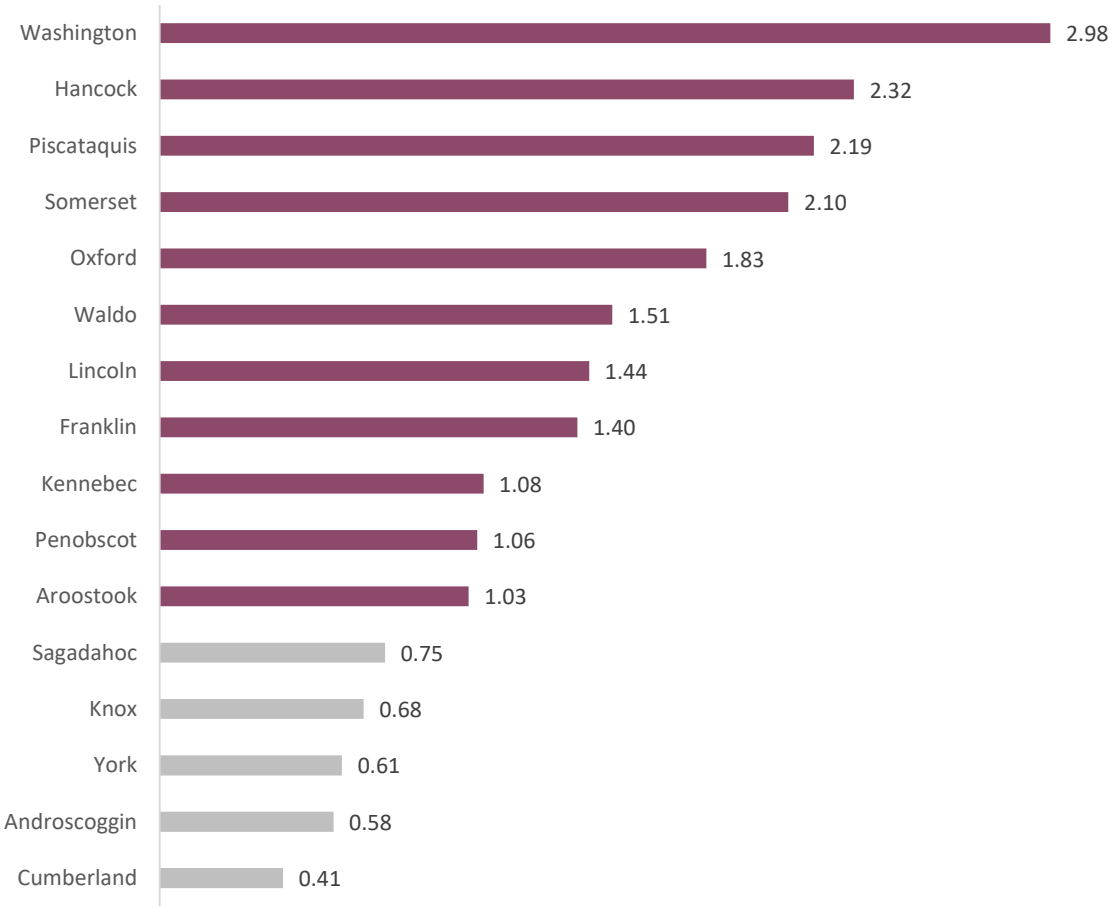
Approximately 11.9% of the 295 unbelted occupant fatalities that occurred between 2018 and 2022 occurred in Penobscot County, with another 9.8% in Kennebec County, and 9.5% in both Hancock and York Counties.



Unbelted Occupant Fatalities by County, Relative Rate



Often, the highest rates of a given event are observed in the most populous counties. To identify disproportionate unbelted fatality rates, relative rates were computed by dividing the unbelted fatality rate of each county by its population rate. Washington County, which held 2.27 % of the population according to the last 5-year American Community Survey, had 6.78% of the unbelted fatalities between 2018 and 2022, resulting in a relative rate of 2.98. This rate is disproportionately high, as are the rates of all counties displayed in red below.

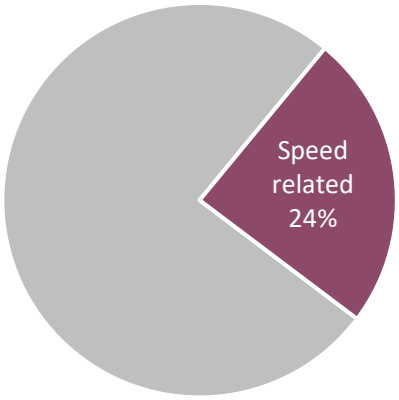


Speeding

Summary

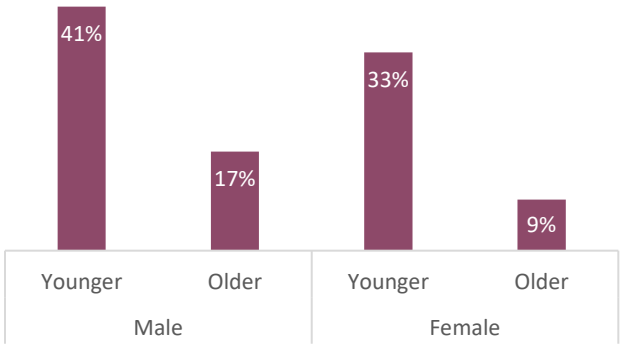
- There were 167 speed-related fatal crashes between 2018 and 2022.
- There were 191 speed-related fatalities between 2018 and 2022, including 146 driver fatalities, 41 passenger fatalities, and 4 pedestrian fatalities.
- Twenty-four percent (24%) of all highway fatalities were speed related.

Speeding Fatalities



There were 191 speed-related fatalities between 2018 and 2022. These fatalities made up approximately 24% of all highway fatalities.

Speeding by Sex and Age

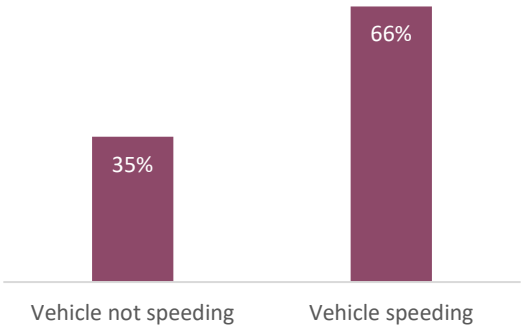


While 16% of all drivers involved in fatal crashes were speeding, a much higher proportion of young male drivers (aged 16 to 20) involved in fatal crashes were speeding (41%) compared to older male drivers (17%), young female drivers (33%), and older female drivers (9%).

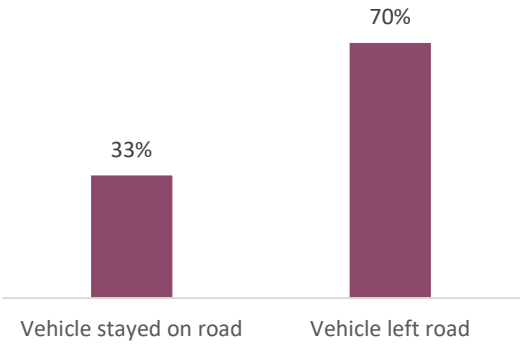
Speeding Fatalities and Leaving the Road

Approximately 66% of speeding vehicles left the road, while approximately 35% of non-speeding vehicles did so. This is an important distinction because a higher proportion of people involved in fatal crashes in which the vehicle leaves the road do not survive the crash. Thiry-three percent (33%) of occupants involved in fatal crashes in which the vehicle stayed on the road did not survive the crash, compared to 70% of occupants in fatal crashes in which the vehicle left the road.

Vehicle Left Road by Speed

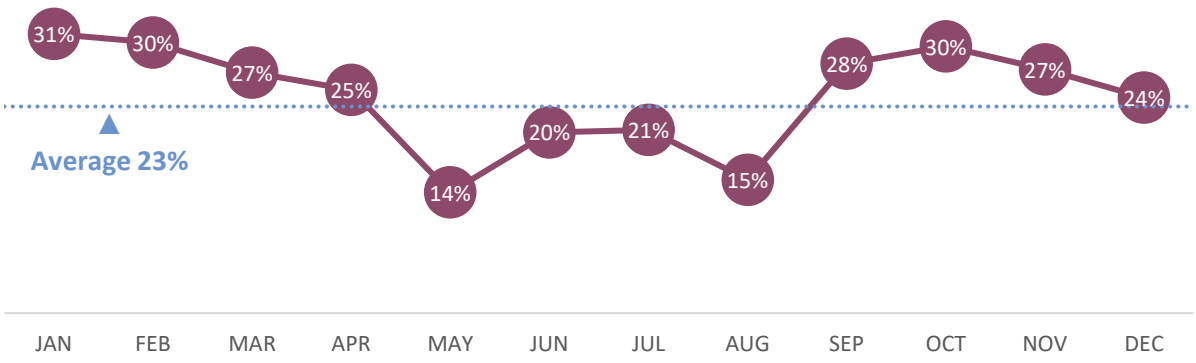


Fatality by Vehicle Left Road

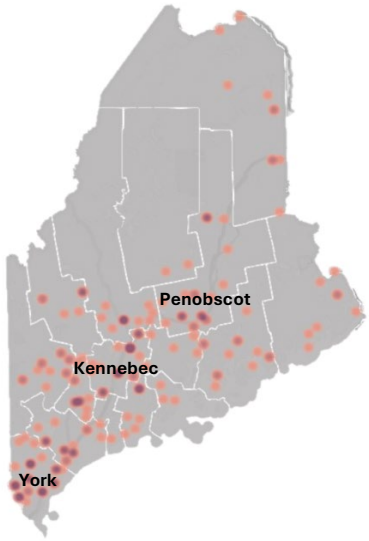


Speeding Fatalities by Month

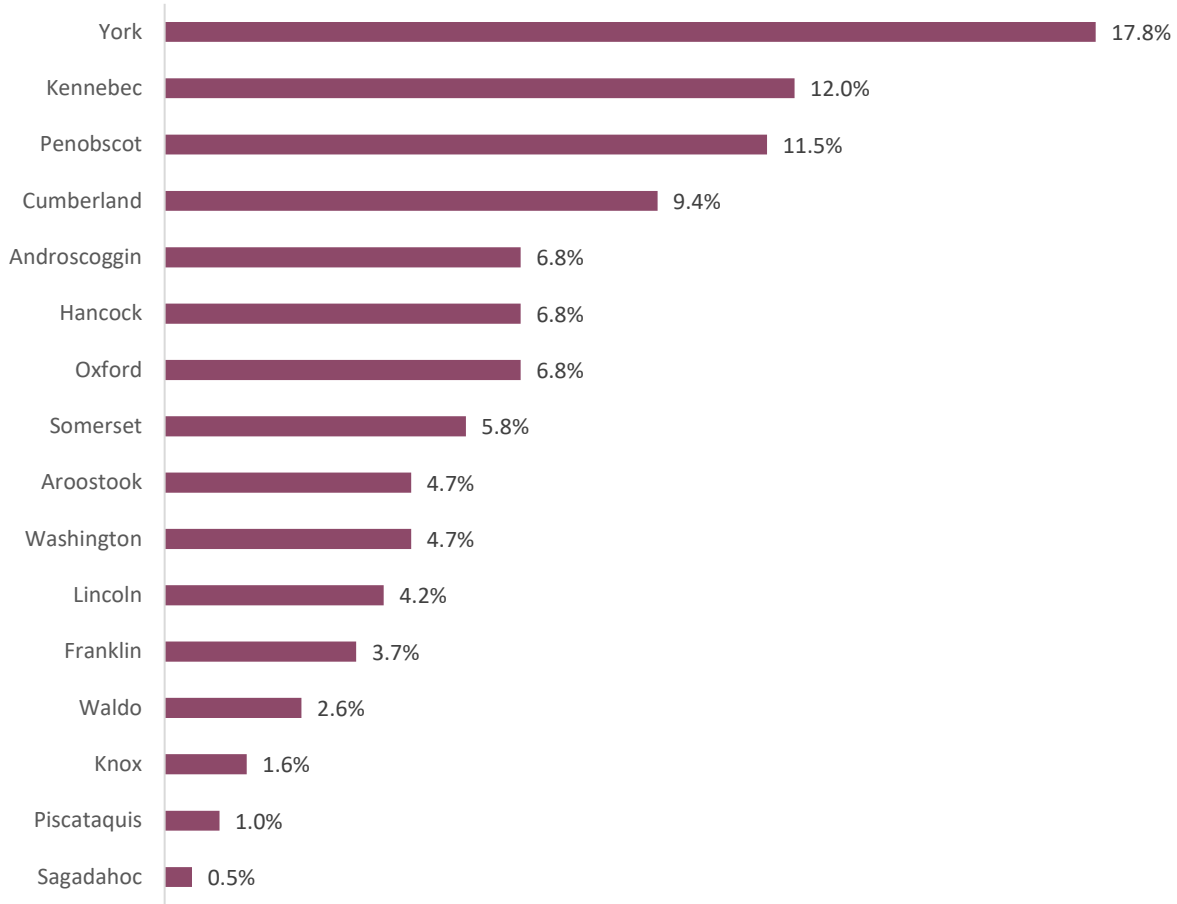
Overall, 23% of fatal crashes were speed related, but this proportion varied depending on month. Rates ranged from a low of 14% in May to a high of 31% in January.



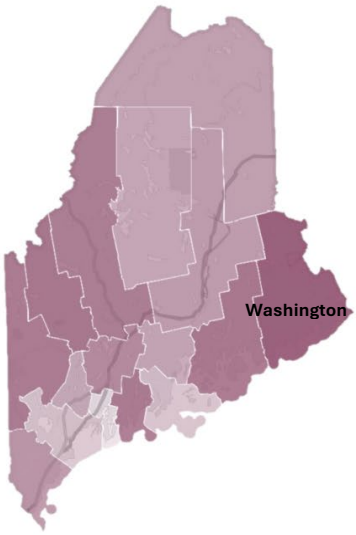
Speeding Fatalities by County



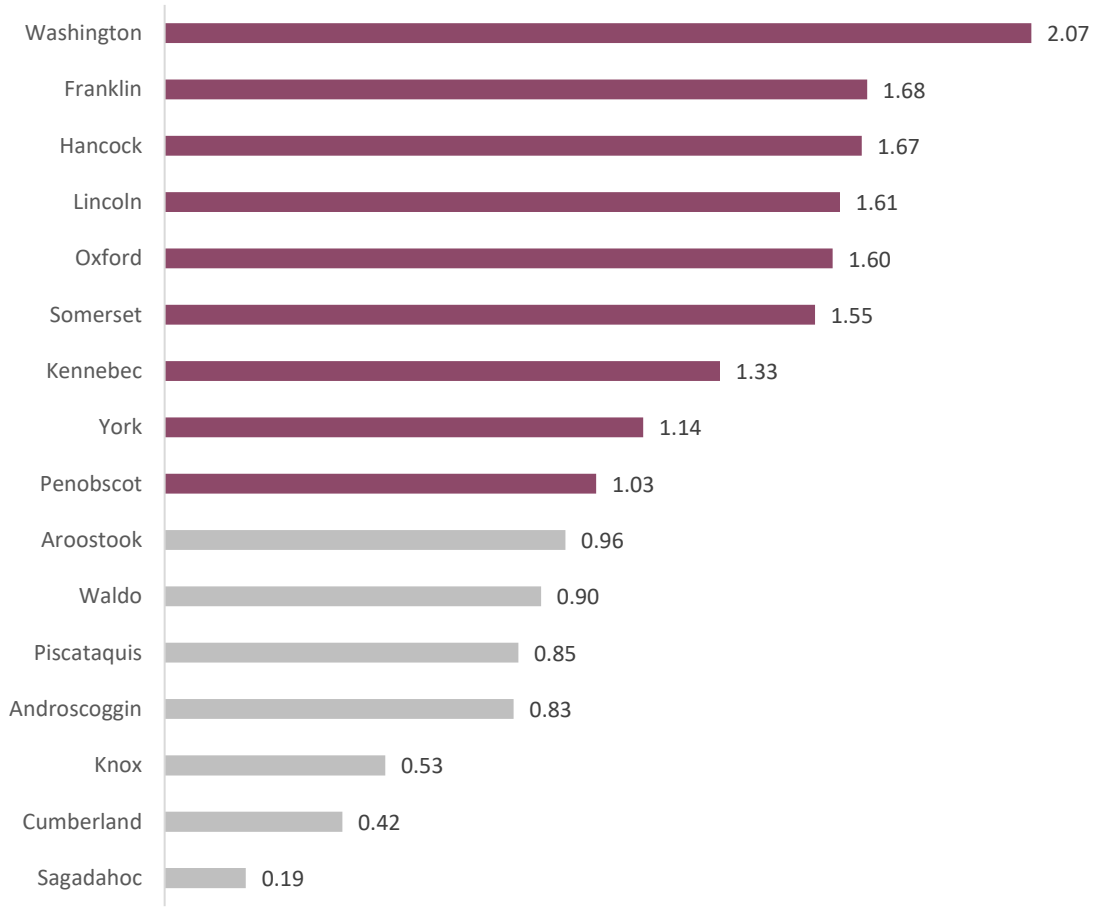
Approximately 17.8% of the 191 speed-related fatalities that occurred between 2018 and 2022 occurred in York County, followed by 12.0% in Kennebec County, and 11.5% in Penobscot County.



Speeding Fatalities by County, Relative Rate



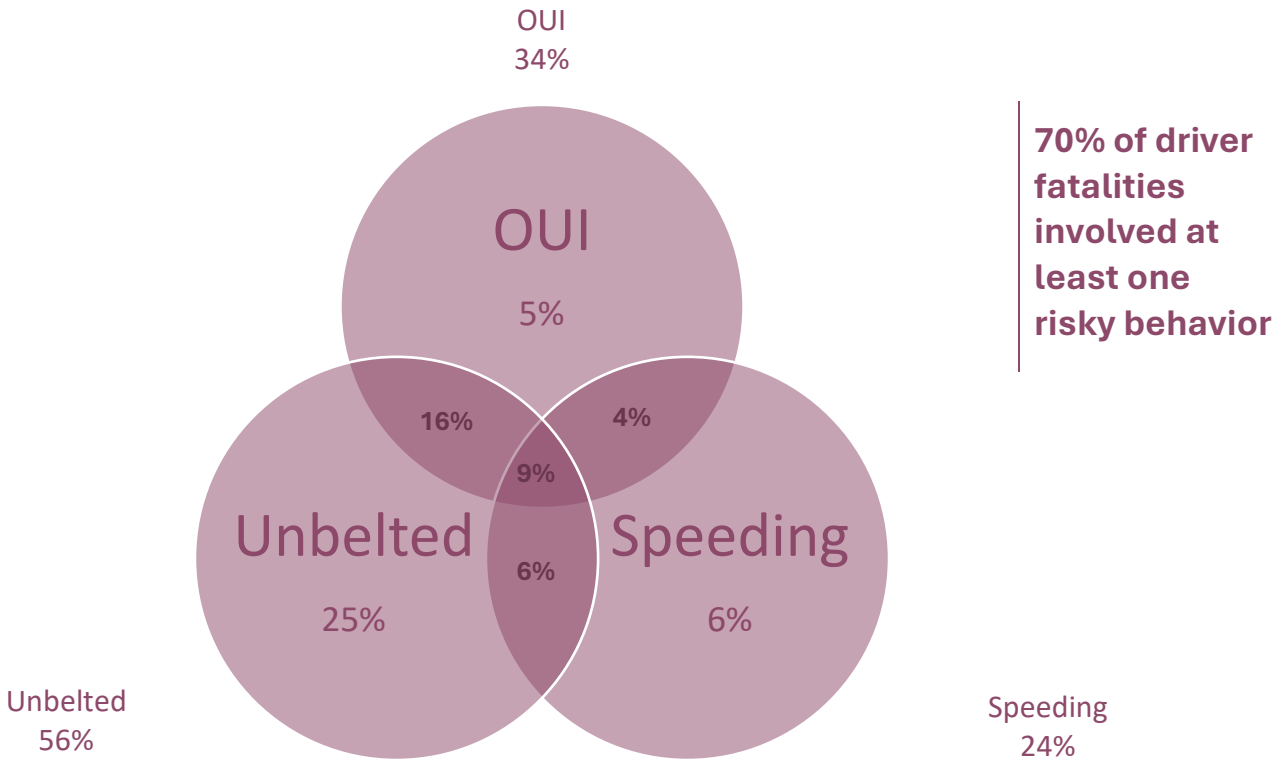
Often, the highest rates of a given event are observed in the most populous counties. To identify disproportionate speed-related fatality rates, relative rates were computed by dividing the speed-related fatality rate of each county by its population rate. Washington County, which held 2.27% of the population according to the last 5-year American Community Survey, had 4.71% of the speed-related fatalities between 2018 and 2022, resulting in a relative rate of 2.07. This rate is disproportionately high, as are the rates of all counties displayed in red below.



Co-Occurring Behaviors

While driving under the influence, speeding, and failure to wear a seat belt are all risky behaviors in themselves, these behaviors often occur together. The following analysis focuses on driver fatalities and identifies the proportion of driver fatalities associated with any or all of these risky behaviors. (Note: This analysis excludes drivers of vehicles with no seat belts, such as motorcycles, ATVs, etc.)

- 5% of drivers were "only" under the influence
- 6% of drivers were "only" speeding
- 25% of drivers were "only" unbelted
- 4% of drivers were under the influence and speeding
- 6% of drivers were unbelted and speeding
- 16% of drivers were unbelted and under the influence
- 9% of drivers were under the influence, unbelted, and speeding
- 70% of drivers were engaged in at least one of these risky behaviors

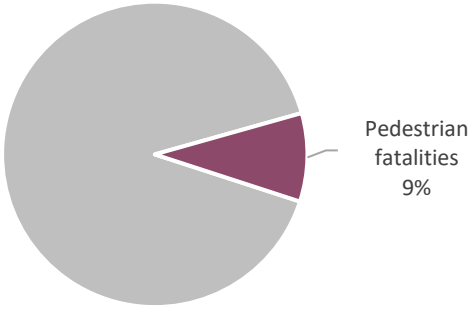


Pedestrians

Summary

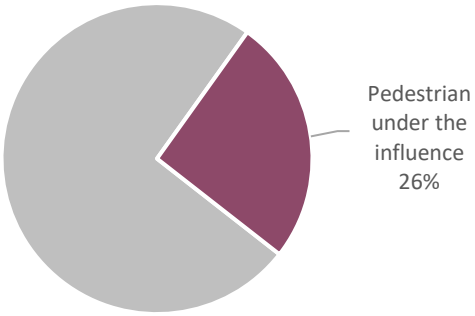
- There were 71 fatal pedestrian crashes between 2018 and 2022 resulting in 74 pedestrian deaths.
- Twenty-six percent (26%) of the pedestrians who died in crashes were under the influence.
- Approximately 9% of all highway fatalities between 2018 and 2022 were pedestrian fatalities.

Pedestrian Fatalities



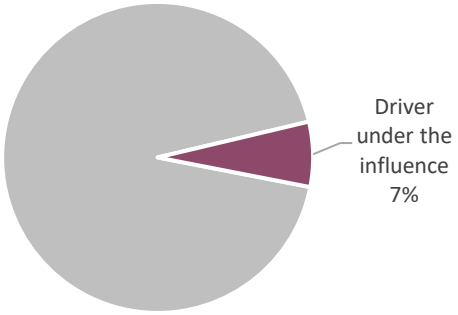
Approximately 9% of highway fatalities were pedestrian fatalities.

Pedestrians Under the Influence



A little over a quarter (26%) of the pedestrians who died as a result of highway crashes were under the influence at the time of the crash.

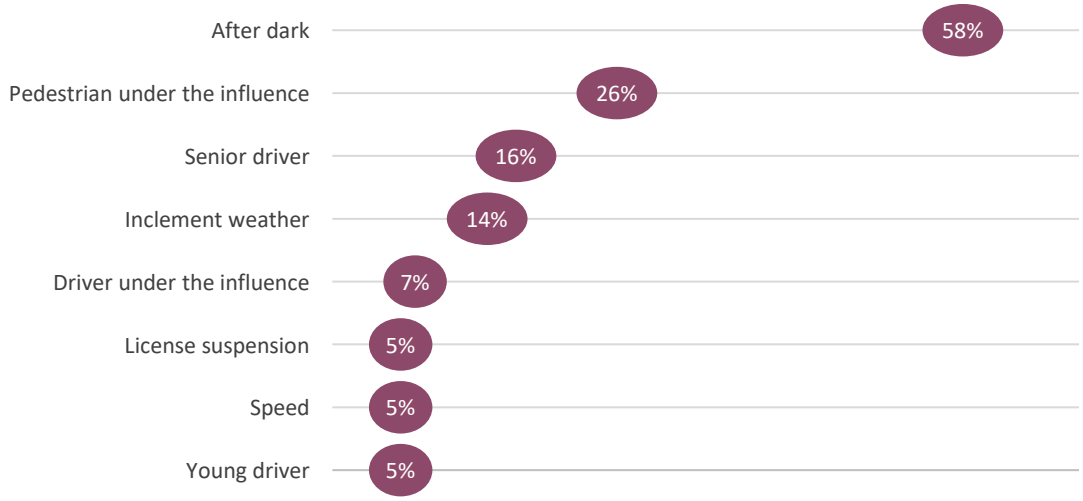
Pedestrian Fatalities and Drivers Under the Influence



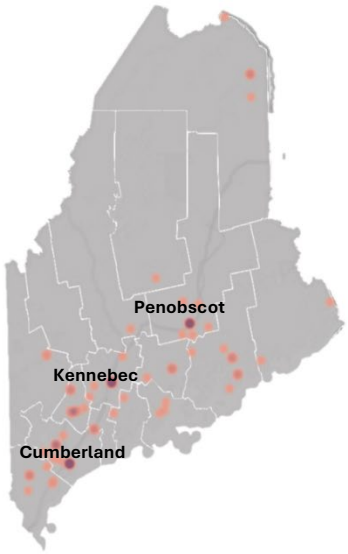
A smaller proportion (7%) of pedestrian fatalities involved a driver who was under the influence at the time of the crash.

Pedestrian Fatalities and Other Factors

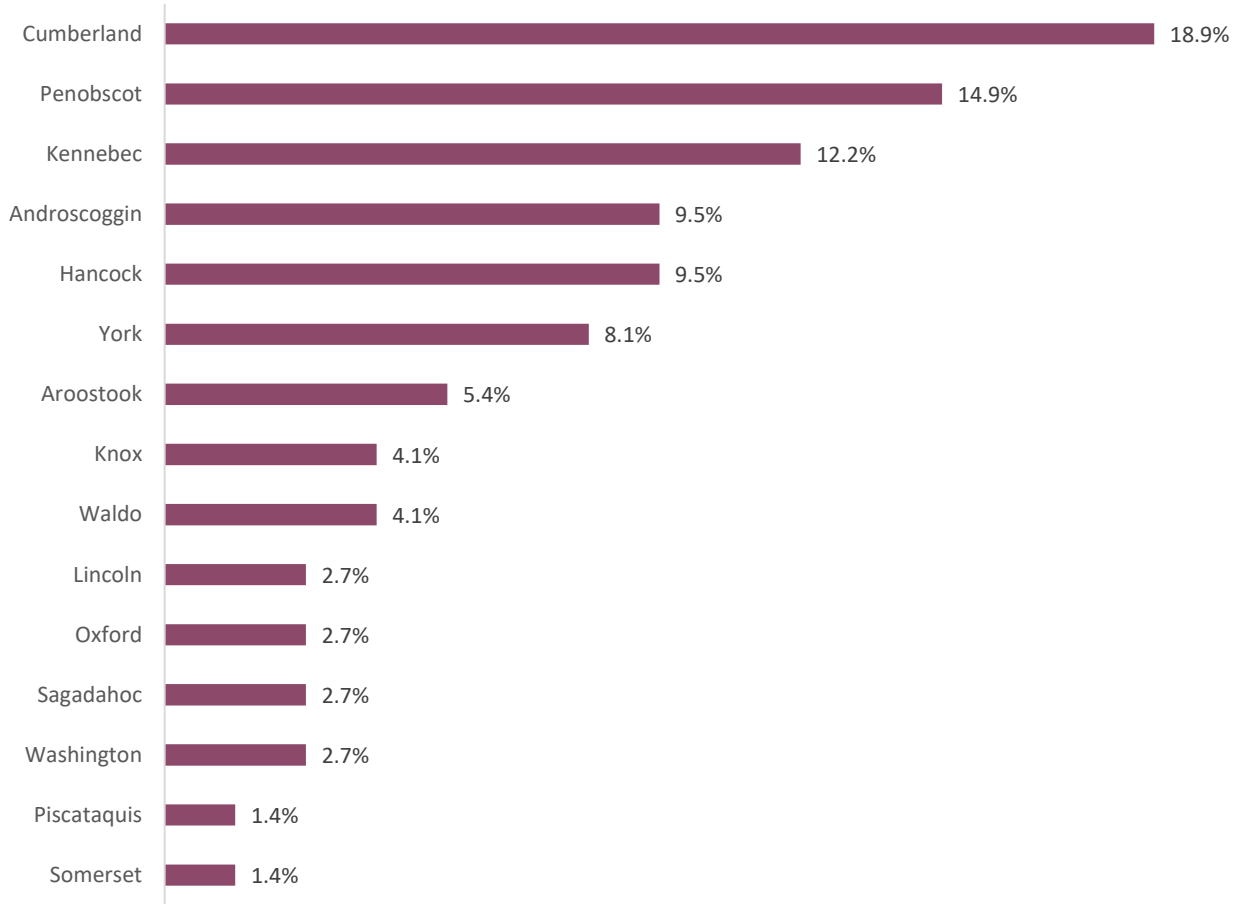
A number of factors contribute to pedestrian fatalities. The following chart summarizes the percentage of fatalities associated with some of these known factors. The factor most frequently associated with pedestrian fatalities was *after dark,* at 58%, followed at a distance by *pedestrian under the influence, senior driver,* and *inclement weather,* at 26%, 16% and 14%, respectively. Only 20% of pedestrian fatalities were not associated with any of the factors presented below.



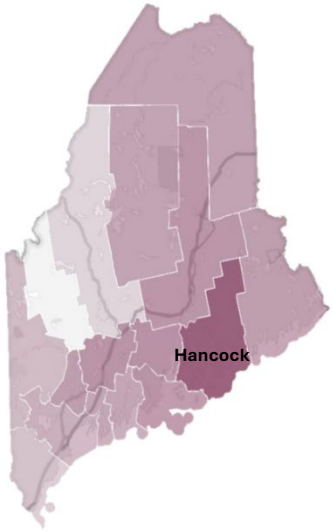
Pedestrian Fatalities by County



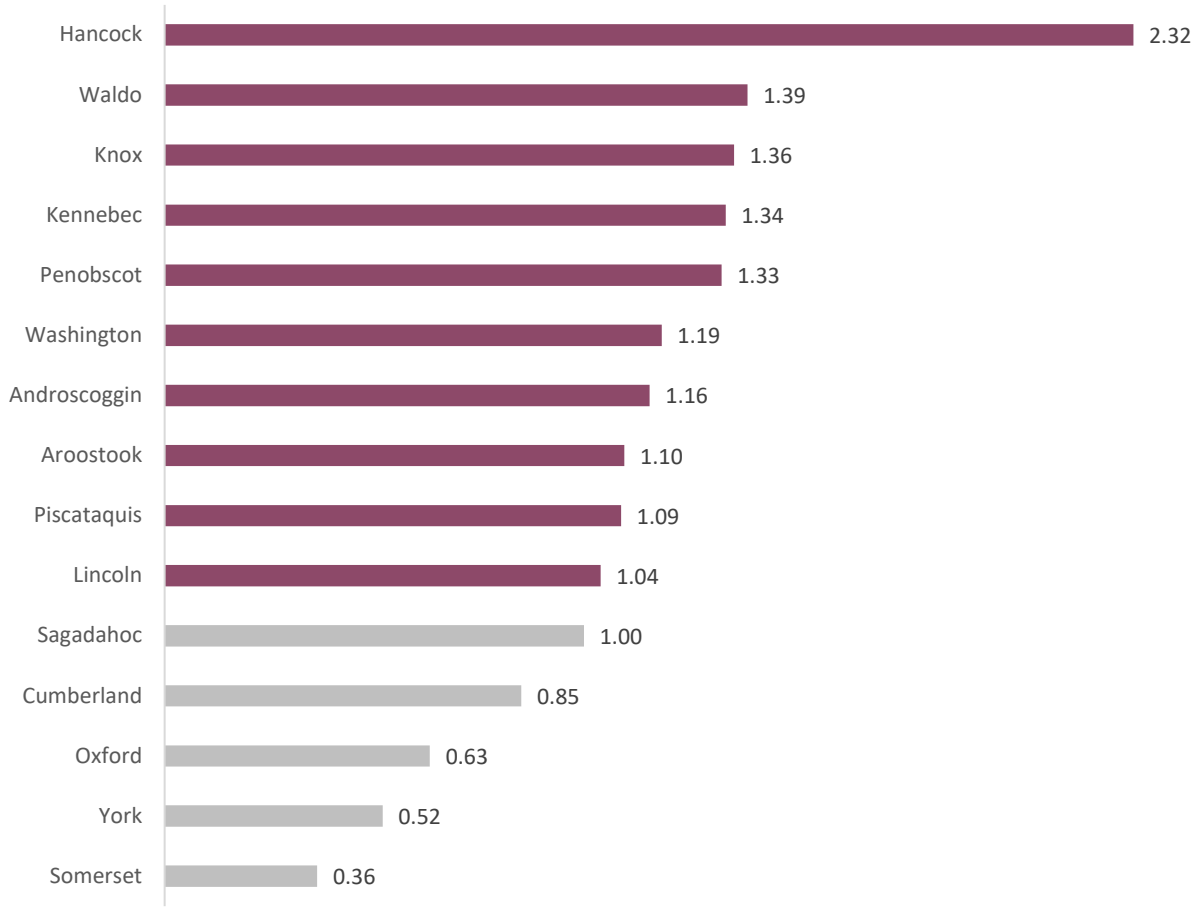
Approximately 18.9% of the 74 pedestrian fatalities that occurred between 2018 and 2022 occurred in Cumberland County, followed by 14.9% in Penobscot County, and 12.2% in Kennebec County.



Pedestrian Fatalities by County, Relative Rate



Often, the highest rates of a given event are observed in the most populous counties. To identify disproportionate pedestrian fatality rates, relative rates were computed by dividing the pedestrian fatality rate of each county by its population rate. Hancock County, which held 4.09% of the population according to the last 5-year American Community Survey, had 9.46% of the pedestrian fatalities between 2018 and 2022, resulting in a relative rate of 2.32. This rate is disproportionately high, as are the rates of all counties displayed in red below.

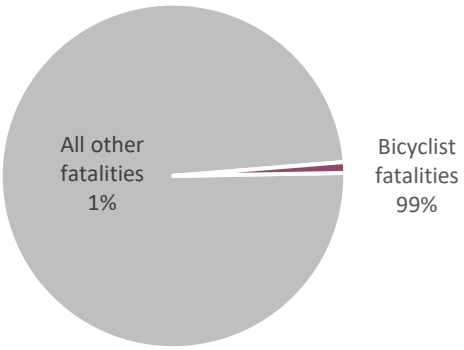


Bicyclists

Summary

- There were 8 fatal bicycle crashes between 2018 and 2022, which took the lives of 8 bicyclists.

Bicyclist Fatalities



Bicyclists make up a very small proportion, 1%, of all highway fatalities. On average, there were 1.6 bicyclist fatalities per year.

Bicyclist Fatalities and Other Factors

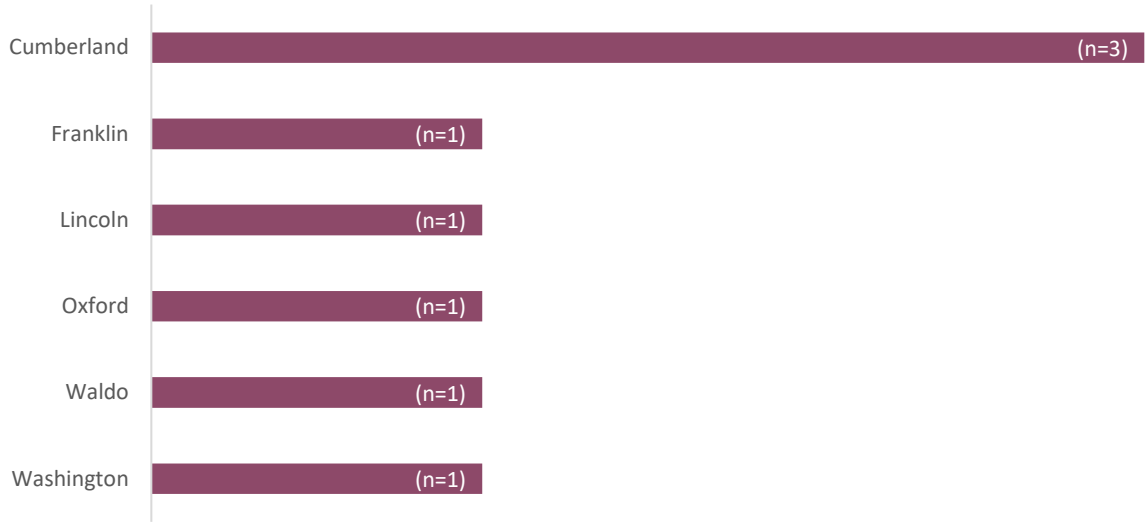
A number of factors contribute to bicyclist fatalities:

- 2 fatalities involved a senior (≥age 65) vehicle driver
- 2 fatalities involved a young (< age 16) bicyclist
- 1 fatality involved a young (< age 21) vehicle driver
- 1 fatality occurred after dark
- 1 fatality involved inclement weather

No bicyclist fatalities involved speeding, an impaired bicyclist, an impaired driver, or a driver's license suspension.

Bicyclist Fatalities by County

A total of 8 bicyclist fatalities occurred in 6 of Maine's 16 counties from 2018 to 2022. These counties were Cumberland, Franklin, Lincoln, Oxford, Waldo, and Washington. (*Note: It is best practice to avoid calculating rates from samples smaller than 30.*)

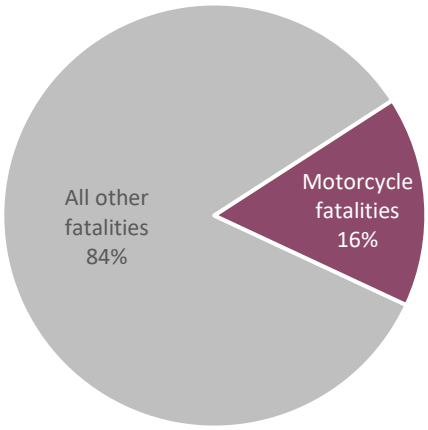


Motorcyclists

Summary

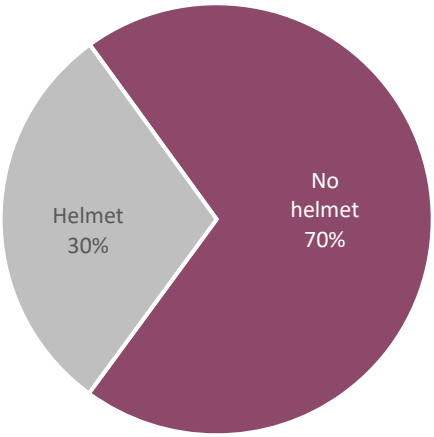
- There were 123 fatal motorcycle crashes between 2018 and 2022 involving 139 motorcyclists (126 drivers and 13 passengers).
- One hundred twenty-seven (127) motorcyclists died in these crashes (117 drivers and 10 passengers).

Motorcyclist Fatalities



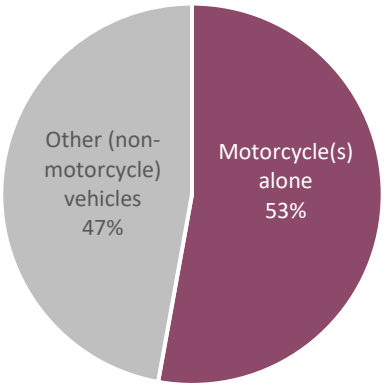
Motorcycle fatalities made up 16% of all the fatalities between 2018 and 2022.

Helmet Use



Approximately 70% of motorcycle fatalities were unhelmeted, meaning the rider failed to use a (DOT-compliant) helmet.

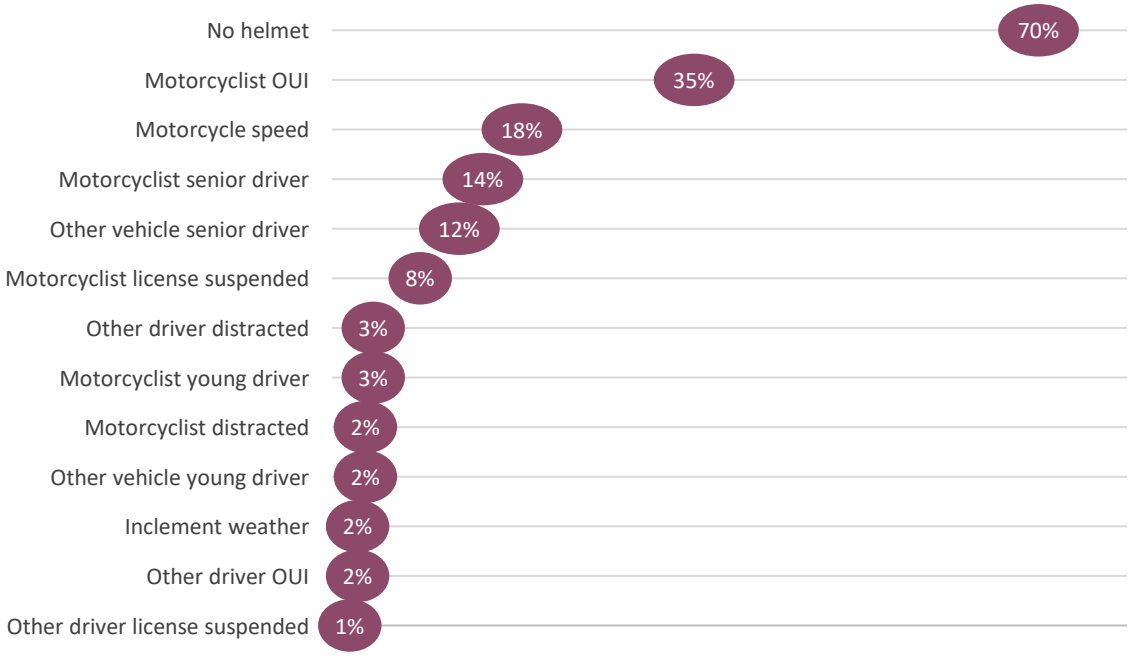
Other Vehicle Involvement



In approximately 53% of all fatal motorcycle incidents, only motorcycles were involved—no other vehicles.

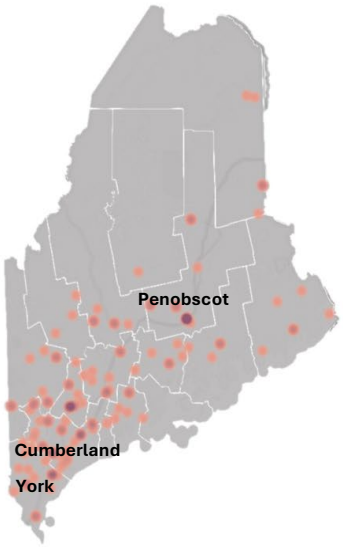
Motorcycle Fatalities and Other Factors

A number of factors may contribute to motorcycle fatalities. The following table summarizes the percentage of fatalities associated with each factor. The factor most frequently associated with motorcyclist fatalities was *no helmet,* at 70%, followed by *motorcyclist DUI,* at 35%. Only 7% of motorcyclist fatalities were not associated with any of the factors below.

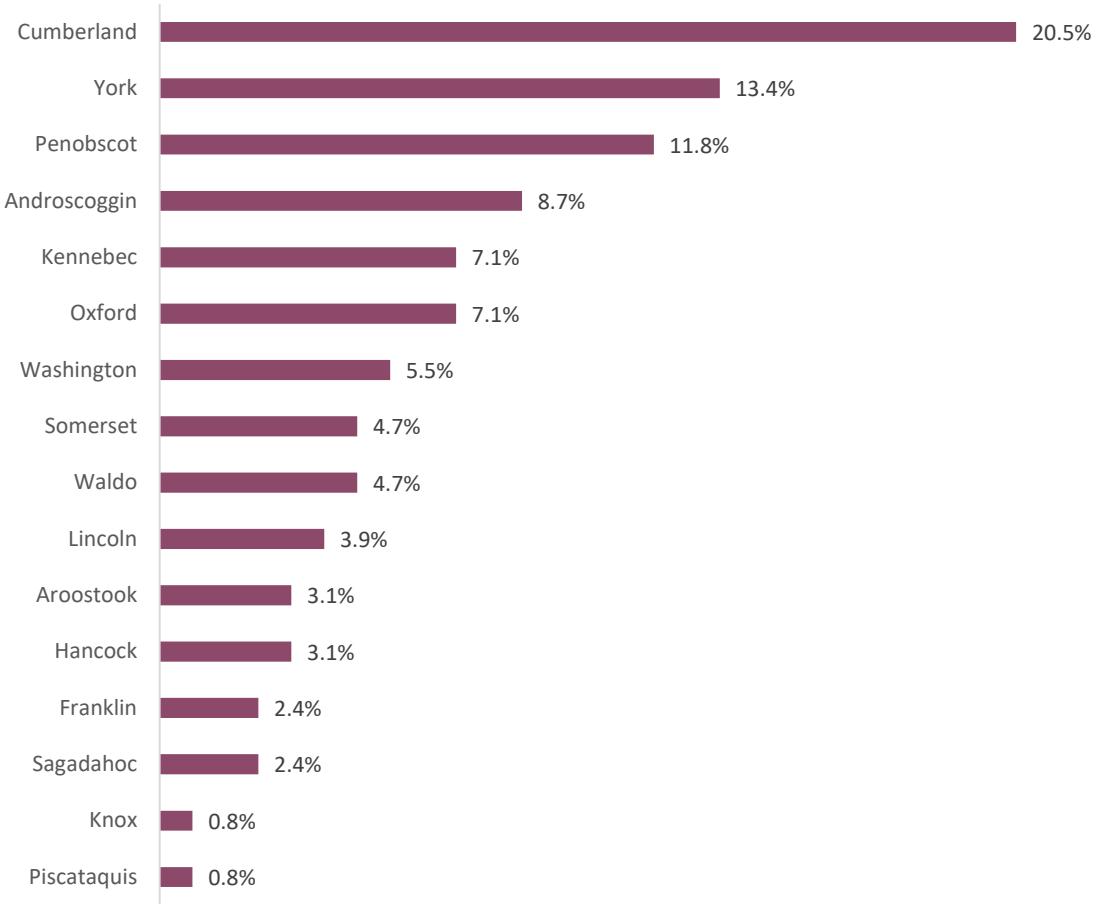


Note: No motorcyclist fatalities were associated with *other vehicle speed*.

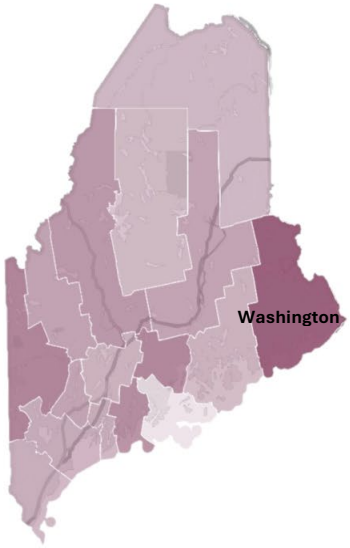
Motorcyclist Fatalities by County



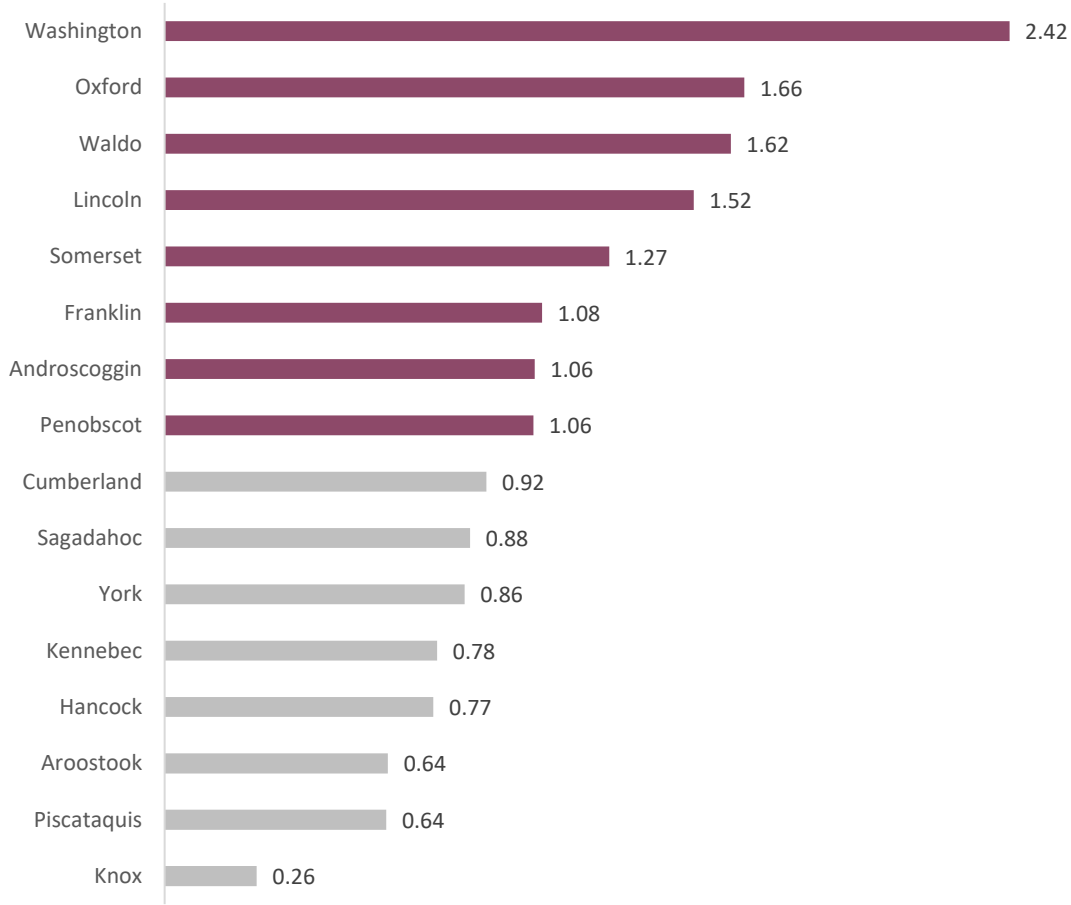
Approximately 20.5% of the 127 motorcyclist fatalities that occurred between 2018 and 2022 occurred in Cumberland County, followed by 13.4% in York County, and 11.8% in Penobscot County.



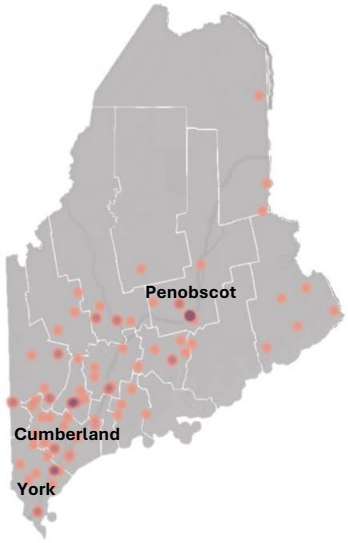
Motorcyclist Fatalities by County, Relative Rate



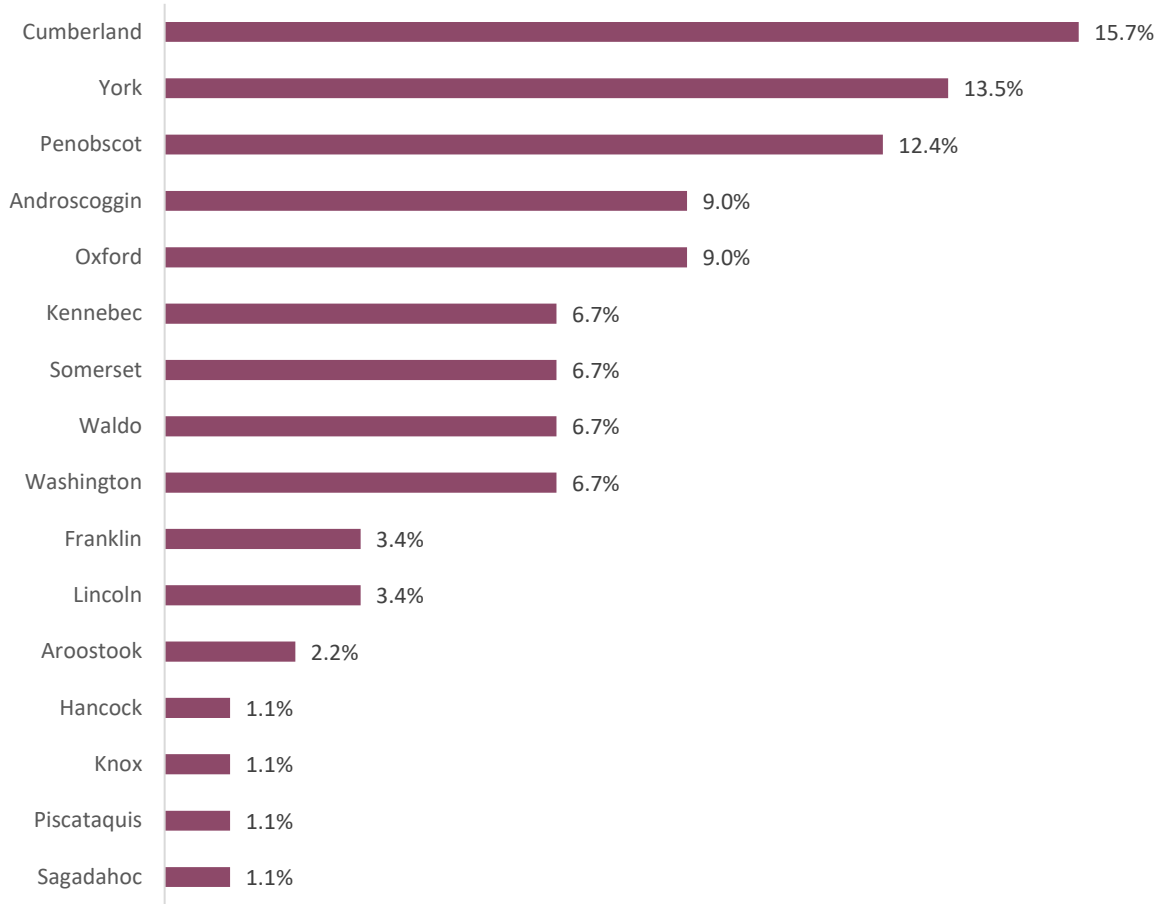
Often, the highest rates of a given event are observed in the most populous counties. To identify disproportionate motorcyclist fatality rates, relative rates were computed by dividing the fatality rate of each county by its population rate. Washington County, which held 2.27% of the population according to the last 5-year American Community Survey, had 5.51% of the motorcyclist fatalities between 2018 and 2022, resulting in a relative rate of 2.42. This rate is disproportionately high, as are the rates of all counties displayed in red below.



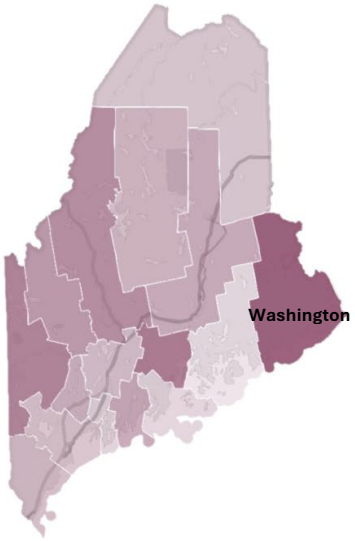
Unhelmeted Motorcyclist Fatalities by County



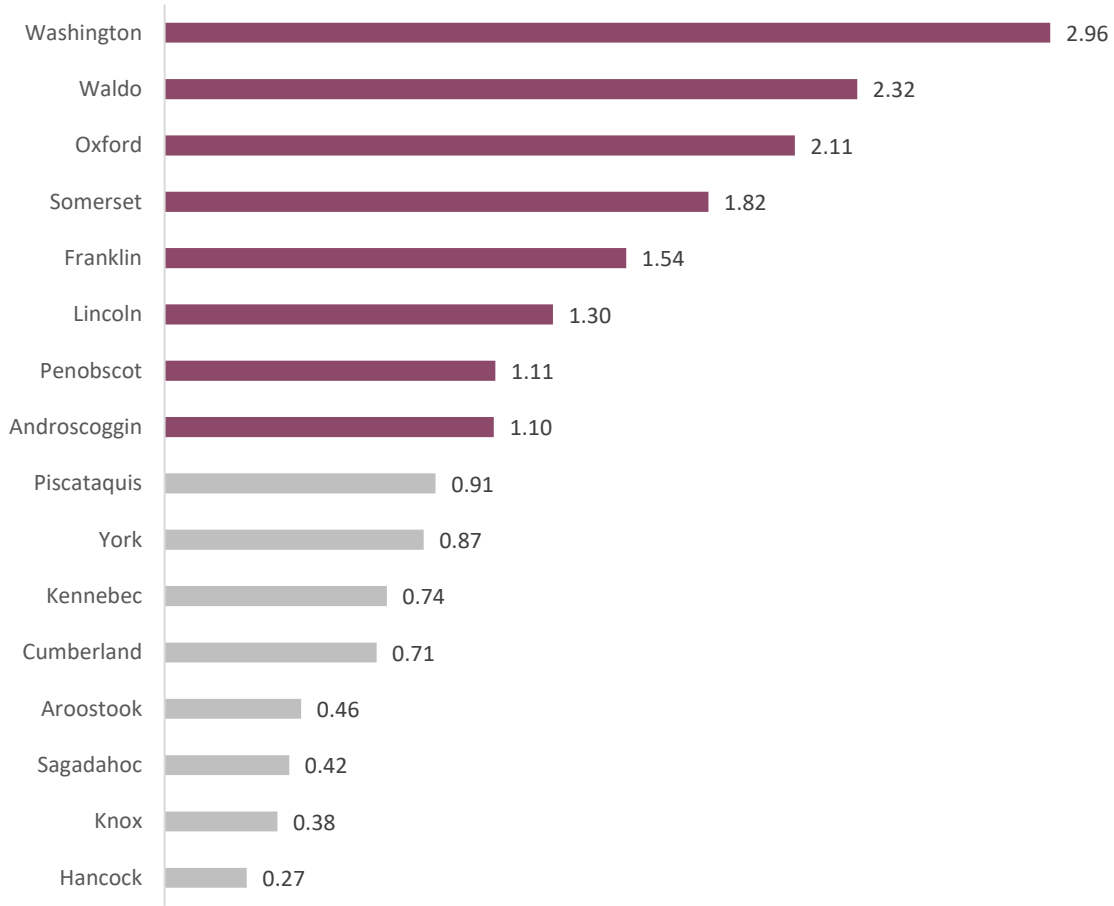
Approximately 15.7% of the 89 unhelmeted motorcyclist fatalities that occurred between 2018 and 2022 occurred in Cumberland County, followed by 13.5% in York County, and 12.4% in Penobscot County.



Unhelmeted Motorcyclist Fatalities by County, Relative Rate



Often, the highest rates of a given event are observed in the most populous counties. To identify disproportionate unhelmeted motorcyclist fatality rates, relative rates were computed by dividing the unhelmeted motorcyclist fatality rate of each county by its population rate. Washington County, which held 2.27% of the population according to the last 5-year American Community Survey, had 6.74% of the unhelmeted motorcyclist fatalities between 2018 and 2022, resulting in a relative rate of 2.96. This rate is disproportionately high, as are the rates of all counties displayed in red below.

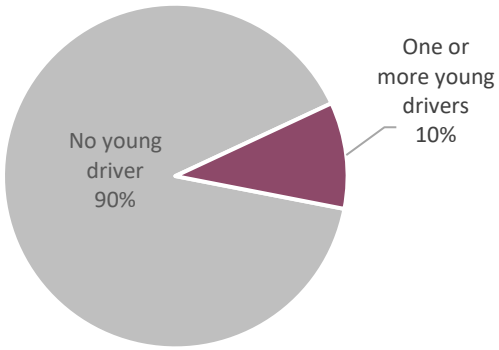


Young Drivers

Summary

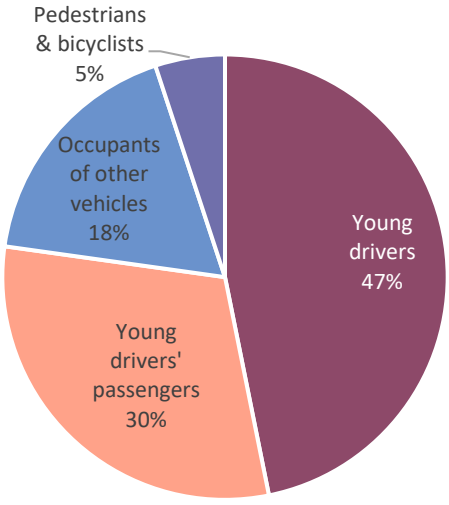
- Young drivers (ages 16 to 20) were involved in 65 of the 726 fatal crashes (9%).
- Seventy-nine (79) of the 790 fatalities involved a young driver (10%).
- Six percent (6%) of drivers involved in fatal crashes between 2018 and 2022 were young drivers.

Young-Driver-Related Fatalities



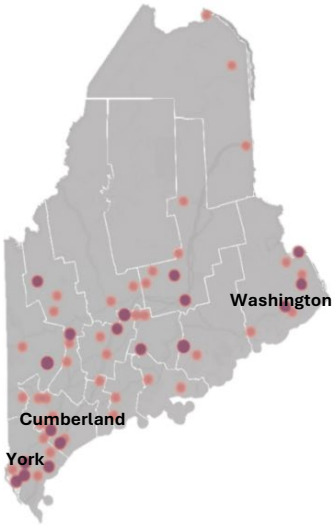
A total of 79 fatalities were associated with young drivers (ages 16 to 20) between 2018 and 2022. These fatalities accounted for 10% of all highway fatalities.

Young-Driver-Related Fatalities by Person Type

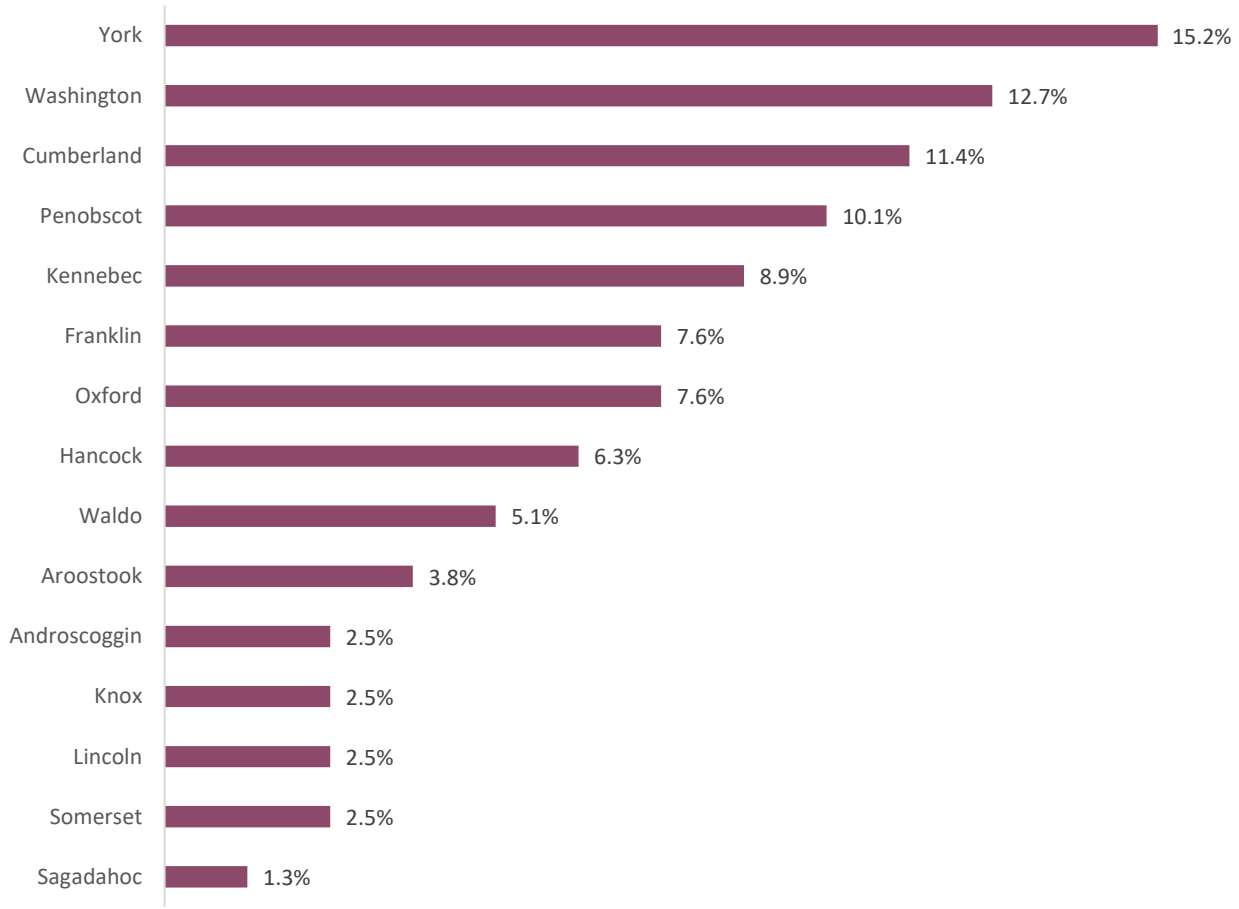


Many of the fatalities associated with young drivers (47%) involved loss of life for the young driver. An additional 30% of fatalities were the young drivers' passengers. This suggests that 77% of the risk associated with young drivers is borne by young drivers and their passengers. An additional 23% of fatalities were occupants of other vehicles, pedestrians, and bicyclists.

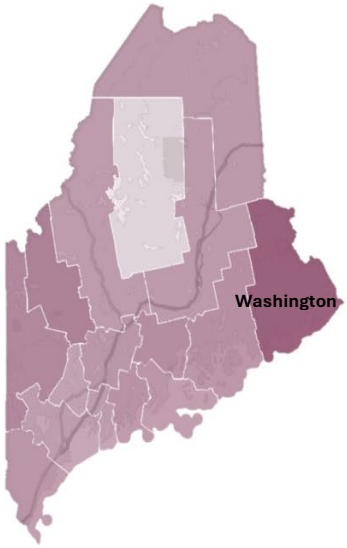
Young-Driver-Related Fatalities by County



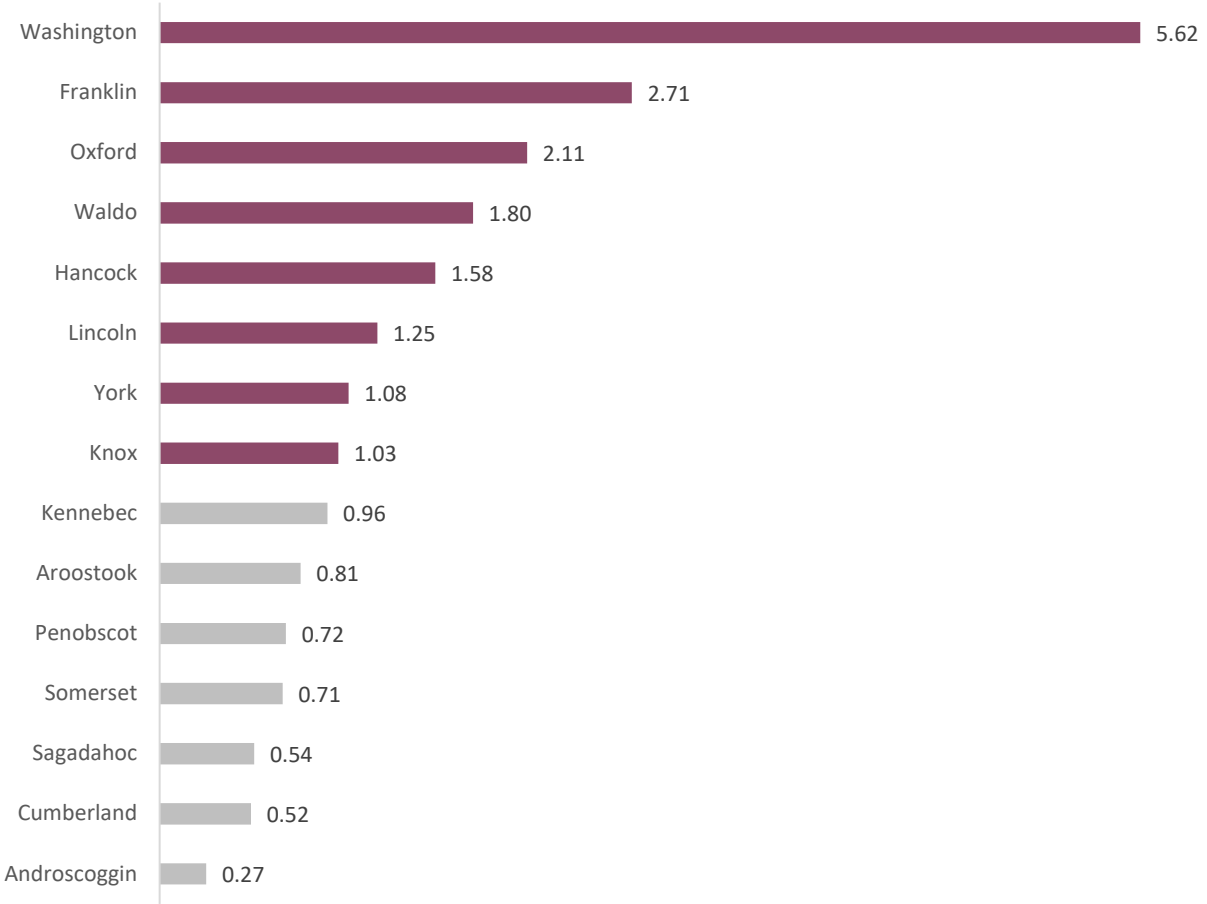
Approximately 15.2% of the 79 young-driver-related fatalities that occurred between 2018 and 2022 occurred in York County, with another 12.7% occurring in Washington County, and 11.4% occurring in Cumberland County.



Young-Driver-Related Fatalities by County, Relative Rate



Often, the highest rates of a given event are observed in the most populous counties. To identify disproportionate young-driver-related fatality rates, relative rates were computed by dividing the young driver-related fatality rate of each county by its population rate. Washington County, which held 2.25% of the youth population (aged 16 to 20) according to the last 5-year American Community Survey, had 12.66% of the young-driver-related fatalities between 2018 and 2022, resulting in a relative rate of 5.62. This rate is disproportionately high, as are the rates of all counties displayed in red below.

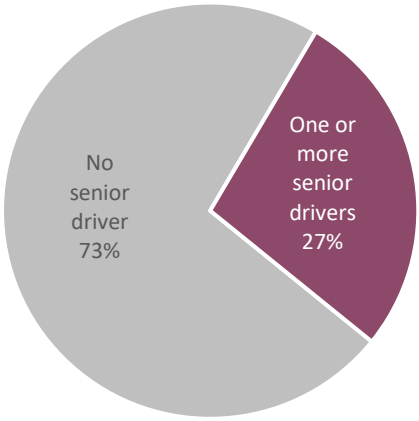


Senior Drivers

Summary

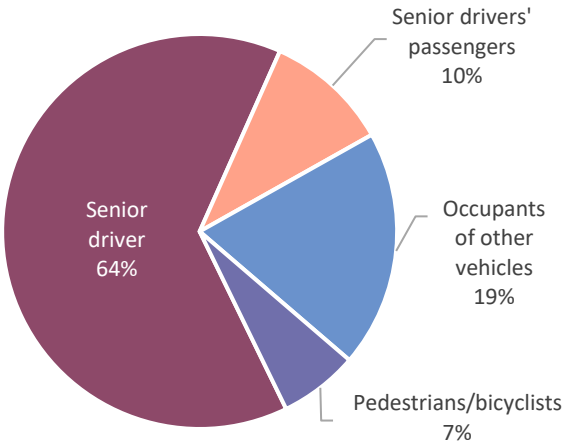
- One or more senior drivers were involved in 200 of the 726 fatal crashes (28%) that occurred between 2018 and 2022.
- Of the 790 fatalities that occurred, 216 (27%) involved at least one senior driver.

Senior-Driver-Related Fatalities



A total of 216 fatalities were associated with senior drivers (ages 65 and older) between 2018 and 2022. These fatalities accounted for 27% of all highway fatalities.

Senior-Driver-Related Fatalities by Person Type



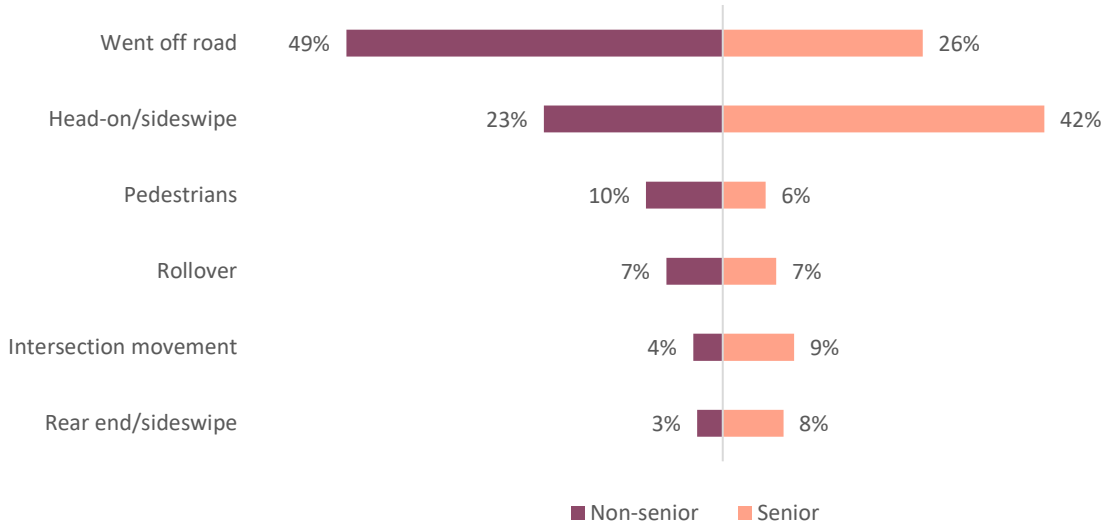
Many of the fatalities associated with senior drivers, 64%, involved loss of life for the senior driver. An additional 10% of fatalities were the senior drivers' passengers. This suggests that 74% of the risk associated with senior drivers is borne by senior drivers and their passengers. An additional 26% of fatalities were occupants of other vehicles, bicyclists, and pedestrians.

Type of Crash

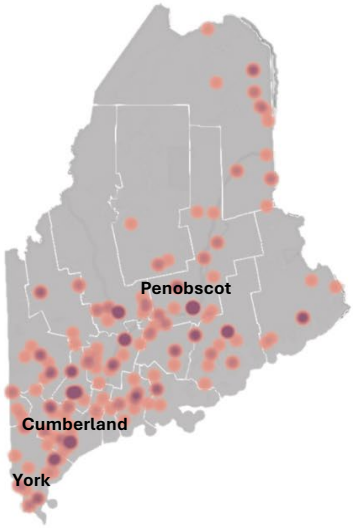
The majority (97%) of **all** fatalities between 2018 and 2022 were related to one of the following crash types:

- Went off road (43%)
- Head-on/sideswipe (28%)
- Pedestrians (9%)
- Rollover (7%)
- Intersection movement (5%)
- Rear-end/sideswipe (5%)

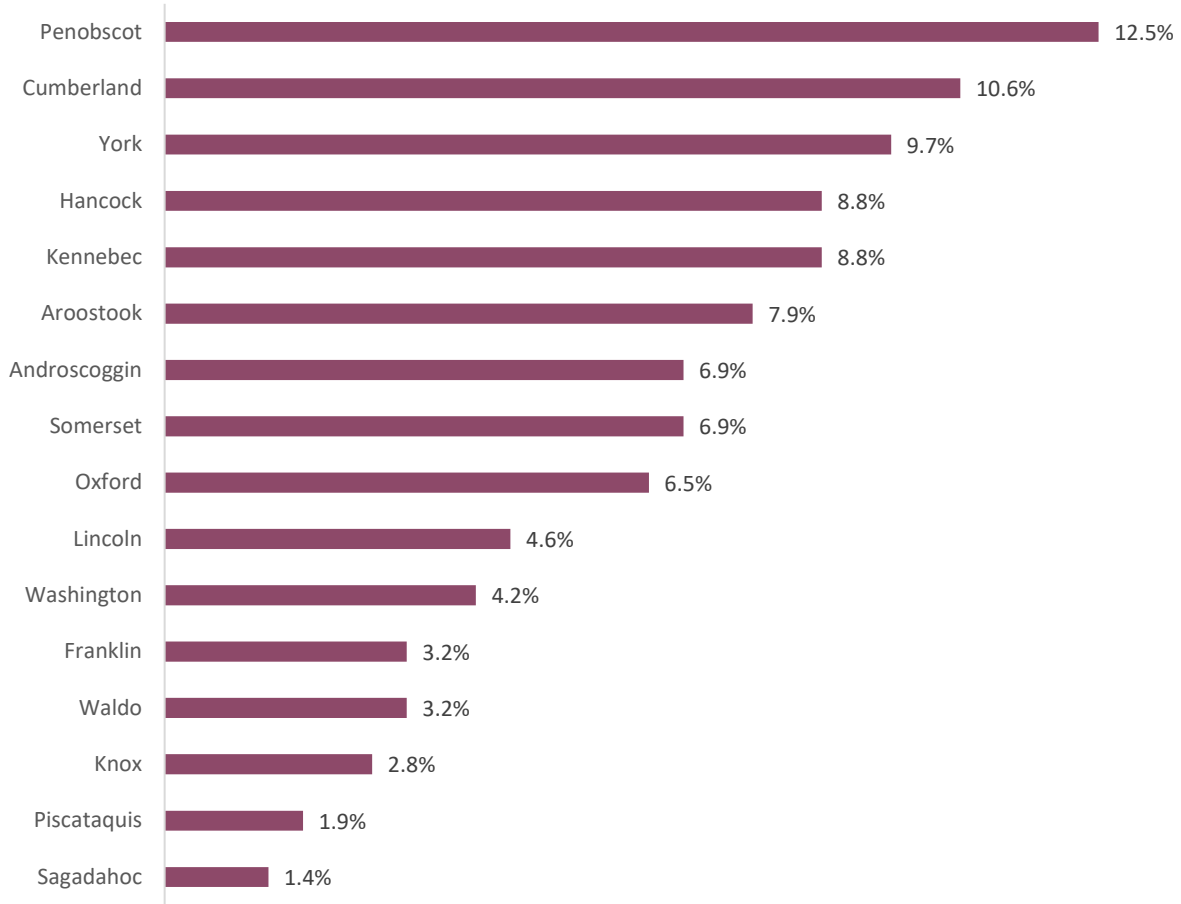
While these six categories were likewise the top six categories for fatalities involving a senior driver, there were nevertheless differences between senior drivers and the remainder of the driving population in the distribution among these categories. *Went off the road* accounted for the plurality of fatalities involving no senior driver; approximately 49% of fatalities from incidents involving no senior driver fell into this category. *Head-on/sideswipe* crashes accounted for an additional 23% of fatalities involving no senior driver. For fatalities involving senior drivers, the order of these categories was flipped; approximately 42% of fatalities involving senior drivers were associated with *head-on/sideswipe* crashes, while 26% were associated with *went off the road*.



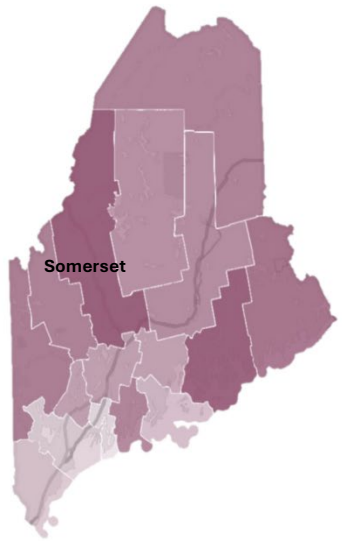
Senior-Driver-Related Fatalities by County



Approximately 12.5% of the 216 senior-driver-related fatalities that occurred between 2018 and 2022 occurred in Penobscot County, followed by 10.6% in Cumberland County, and 9.7% in York County.



Senior-Driver-Related Fatalities by County, Relative Rate



Often, the highest rates of a given event are observed in the most populous counties. To identify disproportionate senior-driver-related fatality rates, relative rates were computed by dividing the senior-driver-related fatality rate of each county by its population rate. Somerset County, which held 3.83% of the senior population (aged 65 and older) according to the last 5-year American Community Survey, had 6.94% of the senior-driver-related fatalities between 2018 and 2022, resulting in a relative rate of 1.81. This rate is disproportionately high, as are the rates of all counties displayed in red below.