

VARIABLE INVESTIGATION FOR KELOWNA WEATHER-CRASH PROJECT

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1 Summary Statistics

Need to remove dew point temp and wind chill,
since they are so correlated with temperature.

	Temp...C.	Dew.Point.Temp...C.	Wind.Chill
Temp...C.	1.0000000	0.9209662	0.9517406
Dew.Point.Temp...C.	0.9209662	1.0000000	0.9312014
Wind.Chill	0.9517406	0.9312014	1.0000000

Summary of all variables:

linker	Date.Of.Loss.Year	Animal.Flag	Crash.Severity
Length:56136	Min. :2017	No :54118	CASUALTY CRASH :11473
Class :character	1st Qu.:2018	Yes: 2018	PROPERTY DAMAGE ONLY:44663
Mode :character	Median :2019		
	Mean :2019		
	3rd Qu.:2020		
	Max. :2021		

Cyclist.Flag	Day.Of.Week	Derived.Crash.Configuration
No :55725	FRIDAY :9316	REAR END :13024
Yes: 411	MONDAY :8024	SINGLE VEHICLE :12495
	SATURDAY :6753	UNDETERMINED :11453
	SUNDAY :5464	SIDE IMPACT :11369
	THURSDAY :9061	CONFLICTED : 3068
	TUESDAY :8728	SIDE SWIPE - SAME DIRECTION: 1833
	WEDNESDAY:8790	(Other) : 2894

Heavy.Veh.Flag	Intersection.Crash	Month.Of.Year	Motorcycle.Flag
No :54085	No :31677	JULY : 5152	No :55673
Yes: 2051	Yes:24459	DECEMBER: 5095	Yes: 463
		JANUARY : 5063	
		AUGUST : 4907	
		OCTOBER : 4836	
		JUNE : 4735	
		(Other) :26348	

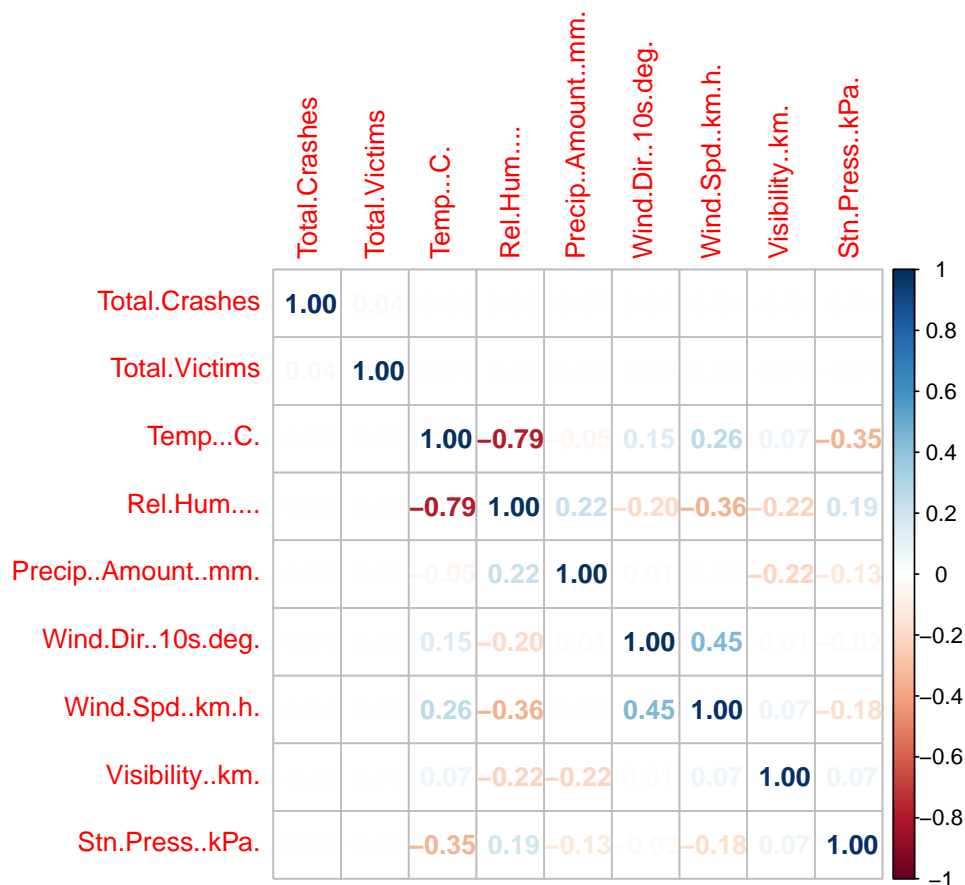
Parked.Vehicle.Flag	Parking.Lot.Flag	Pedestrian.Flag	Time.Category
No :38567	No :37189	No :55790	12:00-14:59:14870
Yes:17569	Yes:18947	Yes: 346	15:00-17:59:14473
			09:00-11:59:11021
			18:00-20:59: 5805
			06:00-08:59: 5489
			21:00-23:59: 2684
			(Other) : 1794

Municipality.Name	Road.Location.Description	Street.Full.Name
KELOWNA :45943	UNKNOWN : 2211	HWY 97 : 6019
WEST KELOWNA:10193	HWY 97 : 1961	HARVEY AVE : 3168
	HARVEY AVE : 1670	HWY 33 : 2064
	LAKESHORE RD: 932	GORDON DR : 1921
	LOUIE DR : 751	LAKESHORE RD : 1372
	HWY 33 : 715	SPRINGFIELD RD: 1326
	(Other) :47896	(Other) :40266

Total.Crashes	Total.Victims	Temp...C.	Rel.Hum....
Min. :1.000	Min. :0.0000	Min. : -22.43	Min. : 12.67
1st Qu.:1.000	1st Qu.:0.0000	1st Qu.: 1.60	1st Qu.: 38.00
Median :1.000	Median :0.0000	Median : 10.37	Median : 62.00
Mean :1.006	Mean :0.2917	Mean : 10.92	Mean : 60.51
3rd Qu.:1.000	3rd Qu.:0.0000	3rd Qu.: 20.00	3rd Qu.: 82.33
Max. :3.000	Max. :9.0000	Max. : 37.73	Max. :100.00
	NA's :35	NA's :35	

Precip..Amount..mm.	Wind.Dir..10s.deg.	Wind.Spd..km.h.	Visibility..km.
Min. :0.00000	Min. : 1.00	Min. : 0.000	Min. : 0.20
1st Qu.:0.00000	1st Qu.:15.67	1st Qu.: 4.667	1st Qu.:16.10
Median :0.00000	Median :19.50	Median : 8.000	Median :16.10
Mean :0.03111	Mean :21.16	Mean :10.277	Mean :15.15
3rd Qu.:0.00000	3rd Qu.:31.00	3rd Qu.:13.667	3rd Qu.:16.10
Max. :4.00000	Max. :36.00	Max. :51.333	Max. :16.10
NA's :35	NA's :4020	NA's :35	NA's :36

Stn.Press..kPa.	Fog	Freezing.Rain	Snow	Rain	Thunderstorms
Min. :94.08	0:52106	0:56134	0:52325	0:50075	0:56002
1st Qu.:96.10	1: 4030	1: 2	1: 3811	1: 6061	1: 134
Median :96.51					
Mean :96.56					
3rd Qu.:96.90					
Max. :99.33					
NA's :35					

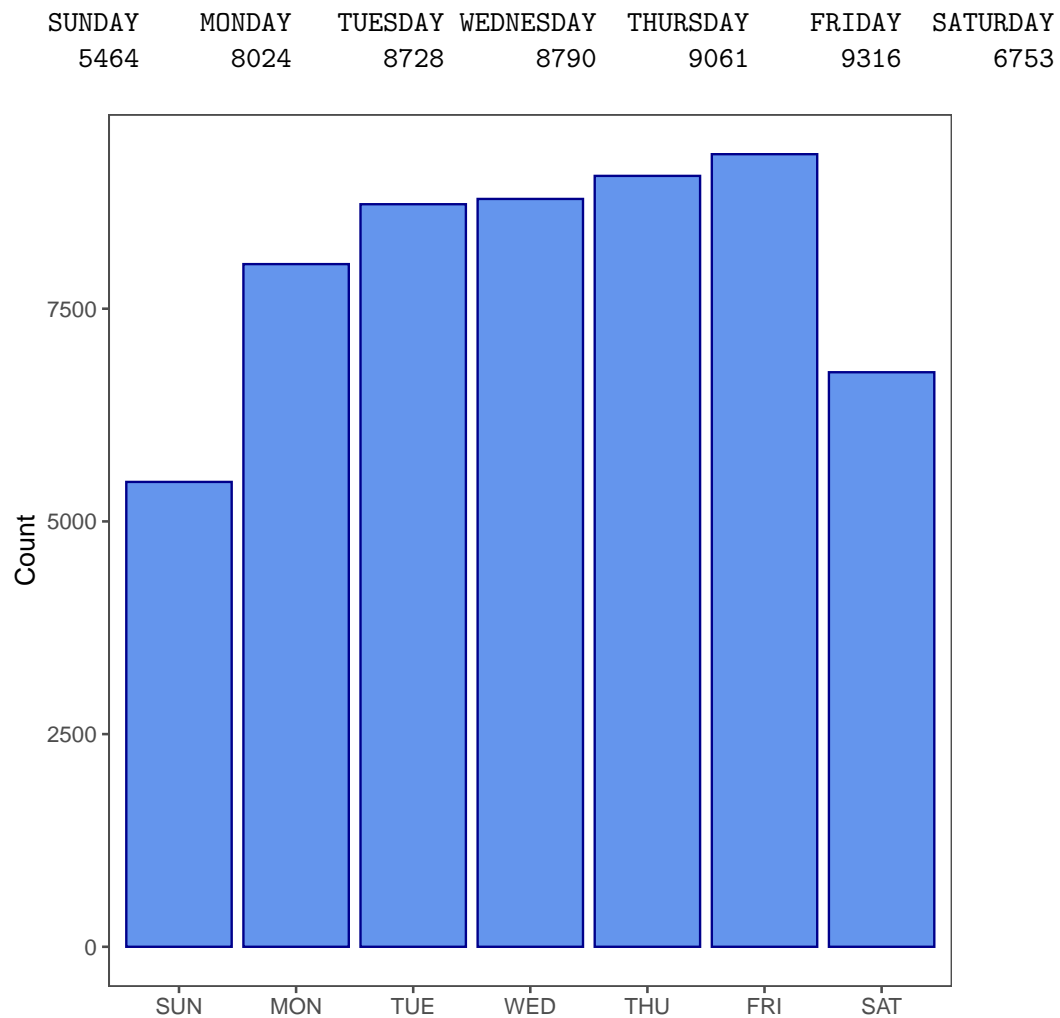


2 Accidents over Time

2.1 Throughout the Day

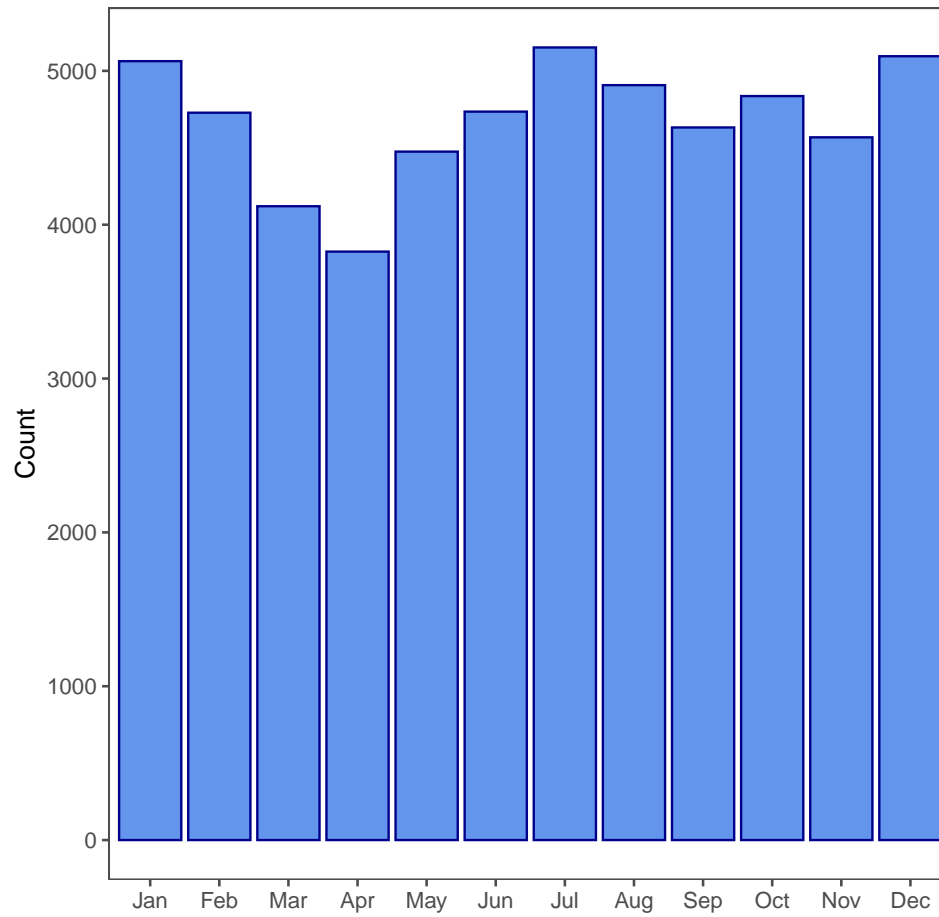
2.2 Day of the Week

Distribution of accidents throughout the week:



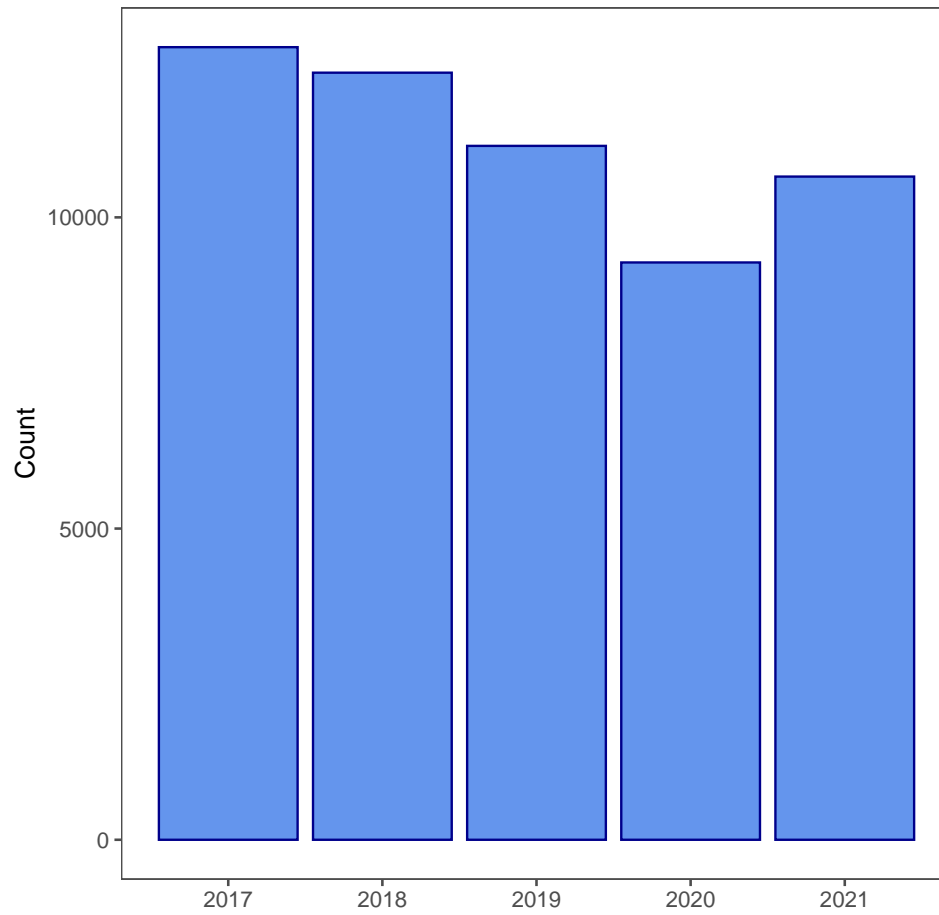
2.3 Month of the Year

JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST
5063	4728	4120	3825	4475	4735	5152	4907
SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER				
4632	4836	4568	5095				



2.4 Over the Years

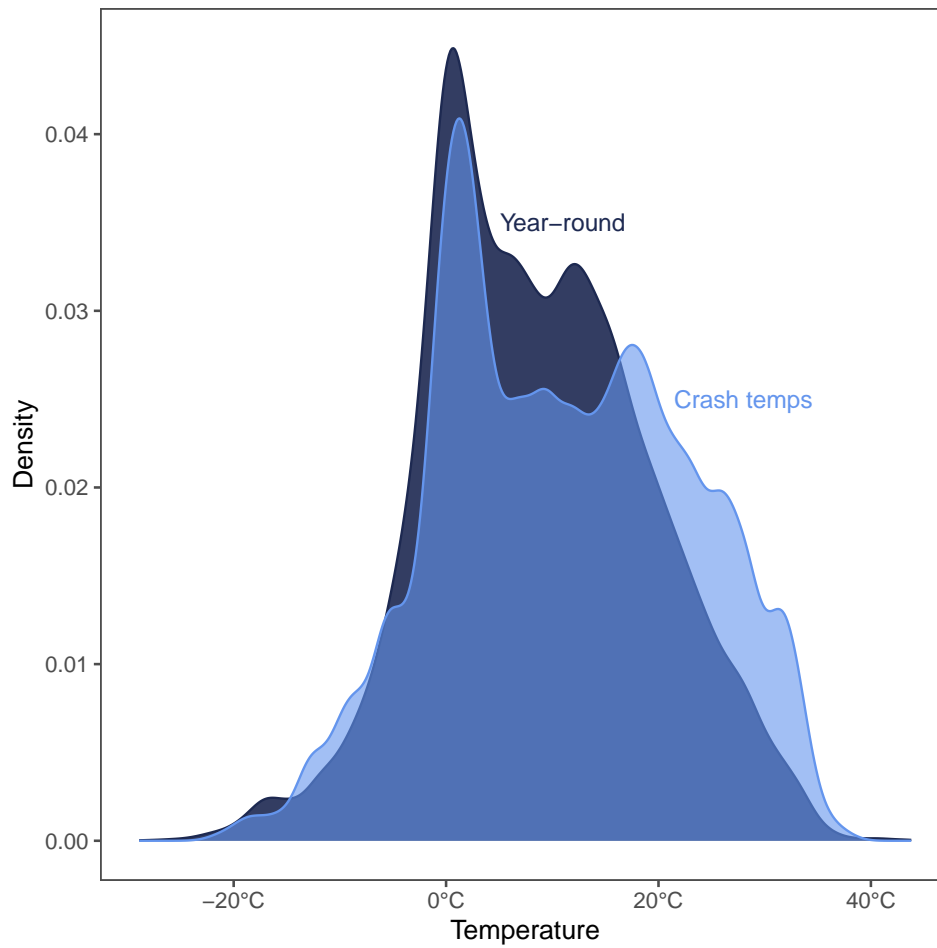
2017	2018	2019	2020	2021
12734	12324	11148	9275	10655

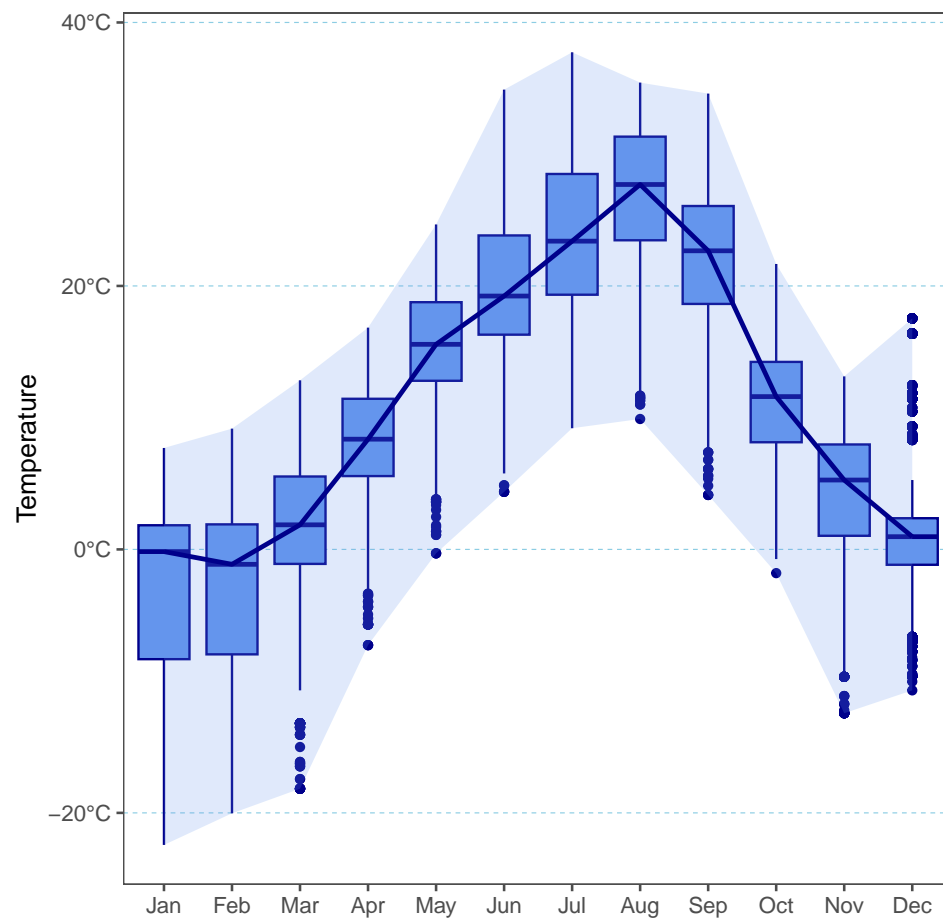


3 Distributions of Weather Variables

3.1 Temperature

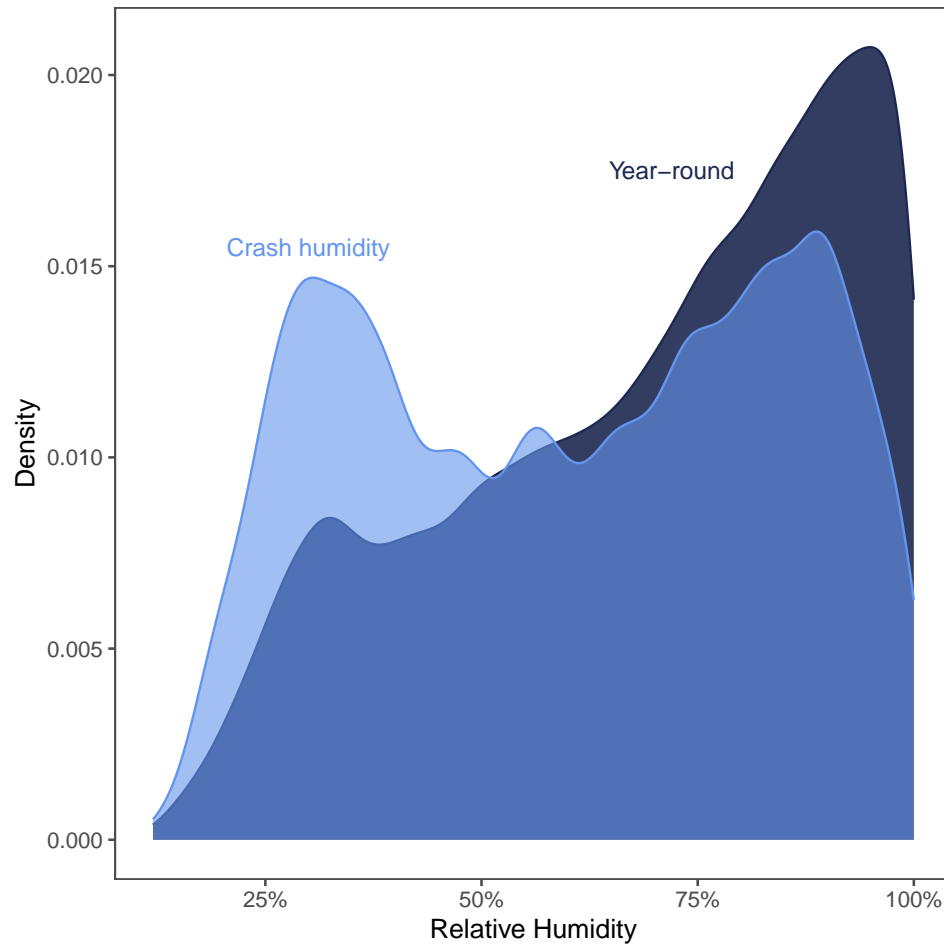
	Avg.temp.	Avg.crash.temp.
1	8.511442	10.91872

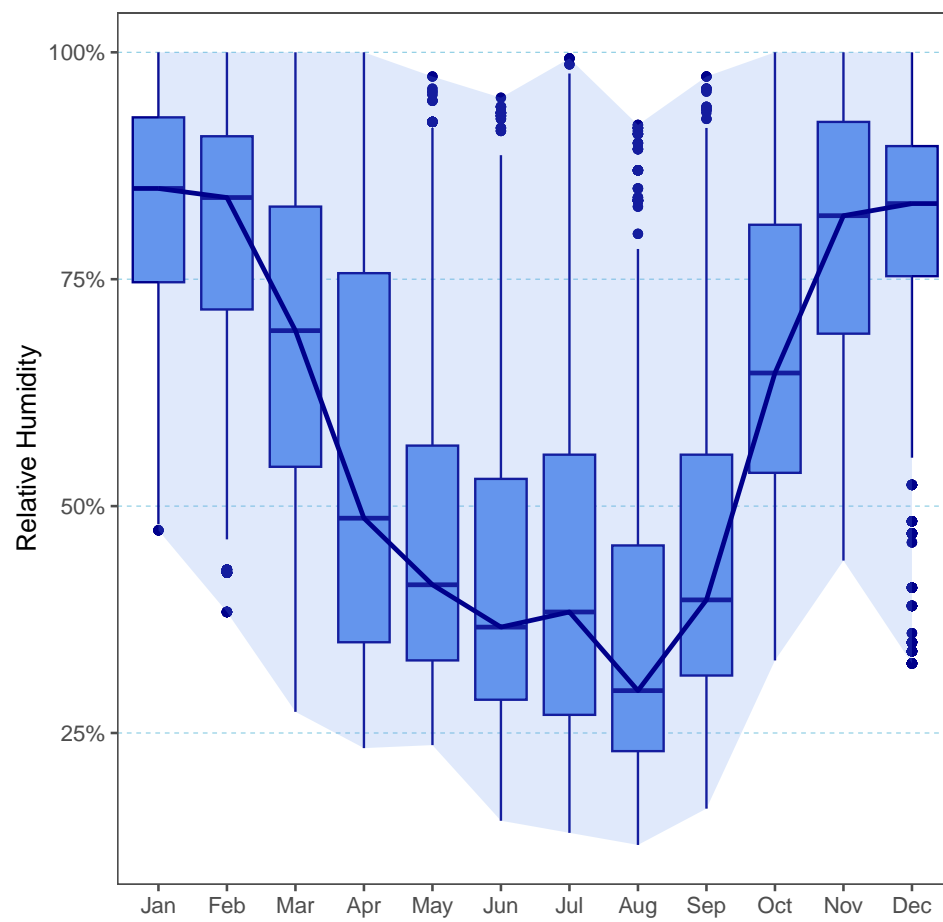




3.2 Relative Humidity

	Avg.humidity	Avg.crash.humidity
1	69.32555	60.50743





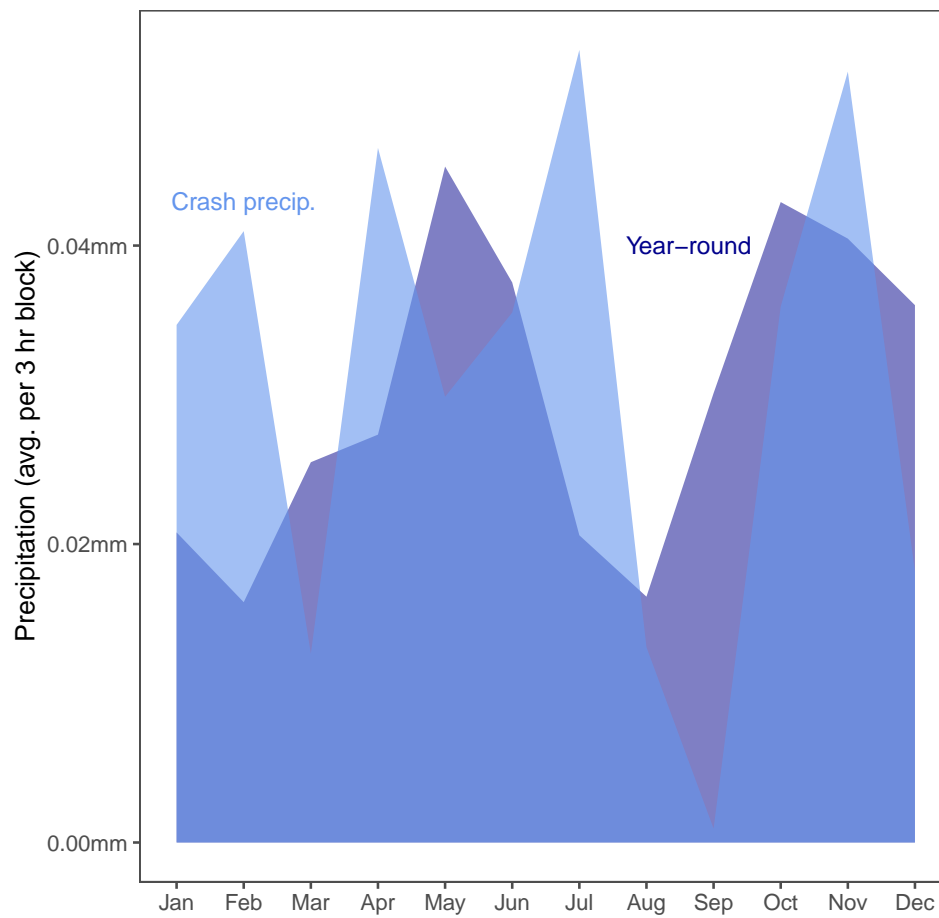
3.3 Precipitation

```
Avg.precipitation Avg.crash.precipitation
1          0.02998858          0.03110818
```

```
[1] "Rounded table of precipitation values:"
```

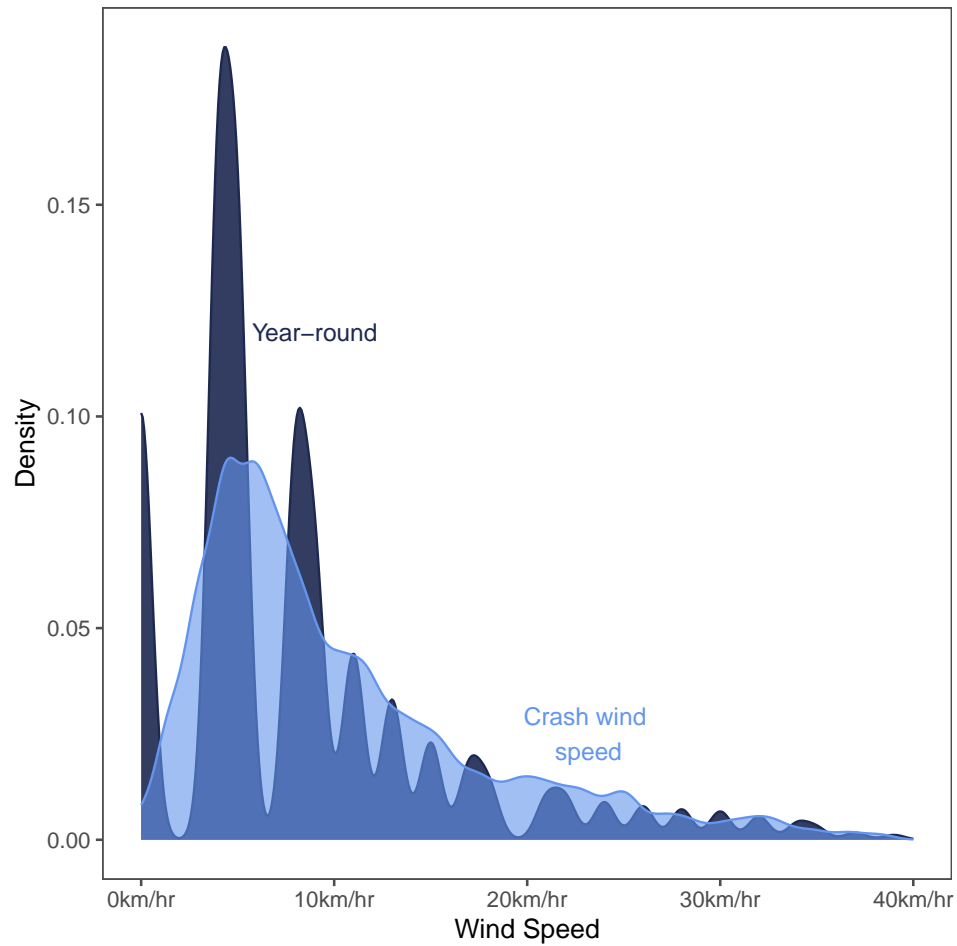
```
      0      1      2      3      4
54934 1105    54     1     7
```

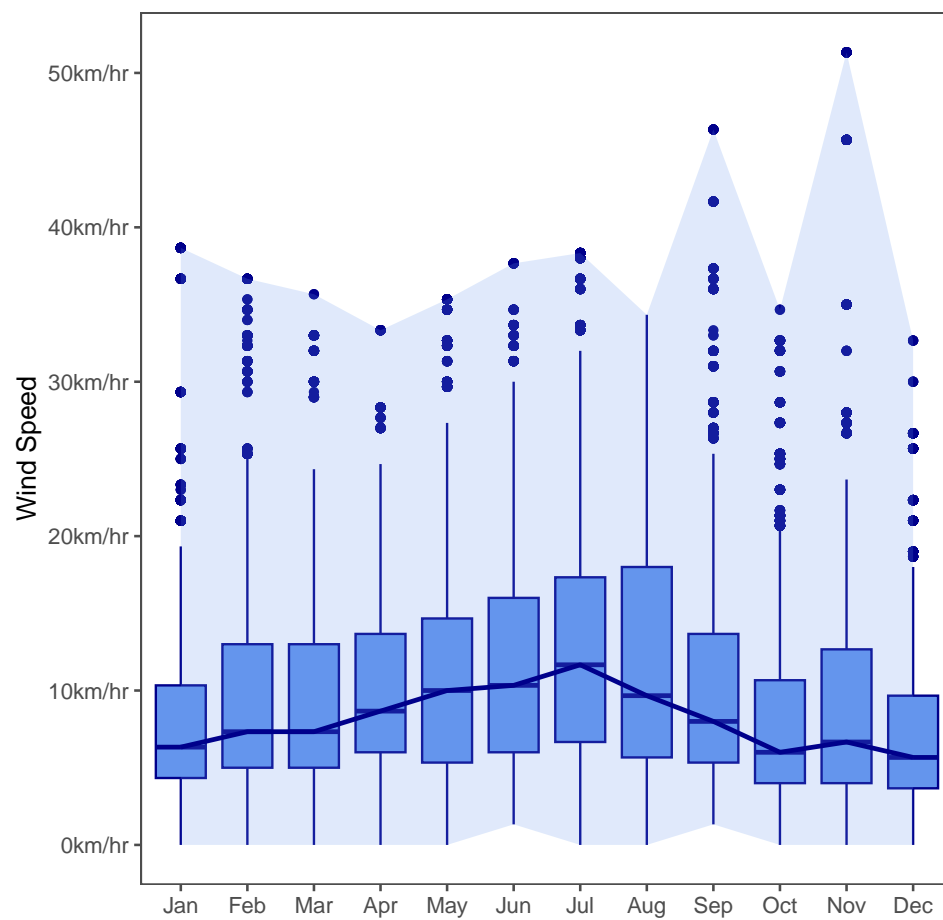
```
[1] "Many are 0..."
```



3.4 Wind Speed

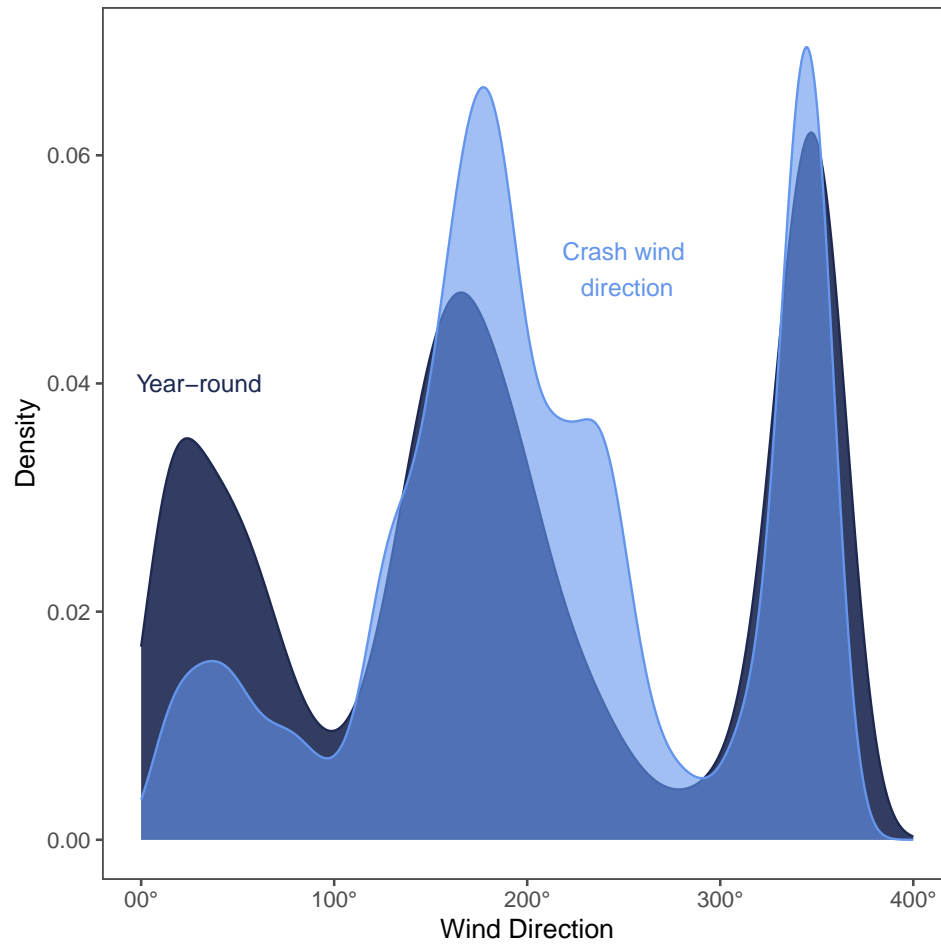
	Avg.wind.speed	Avg.crash.wind.speed
1	8.41538	10.27689

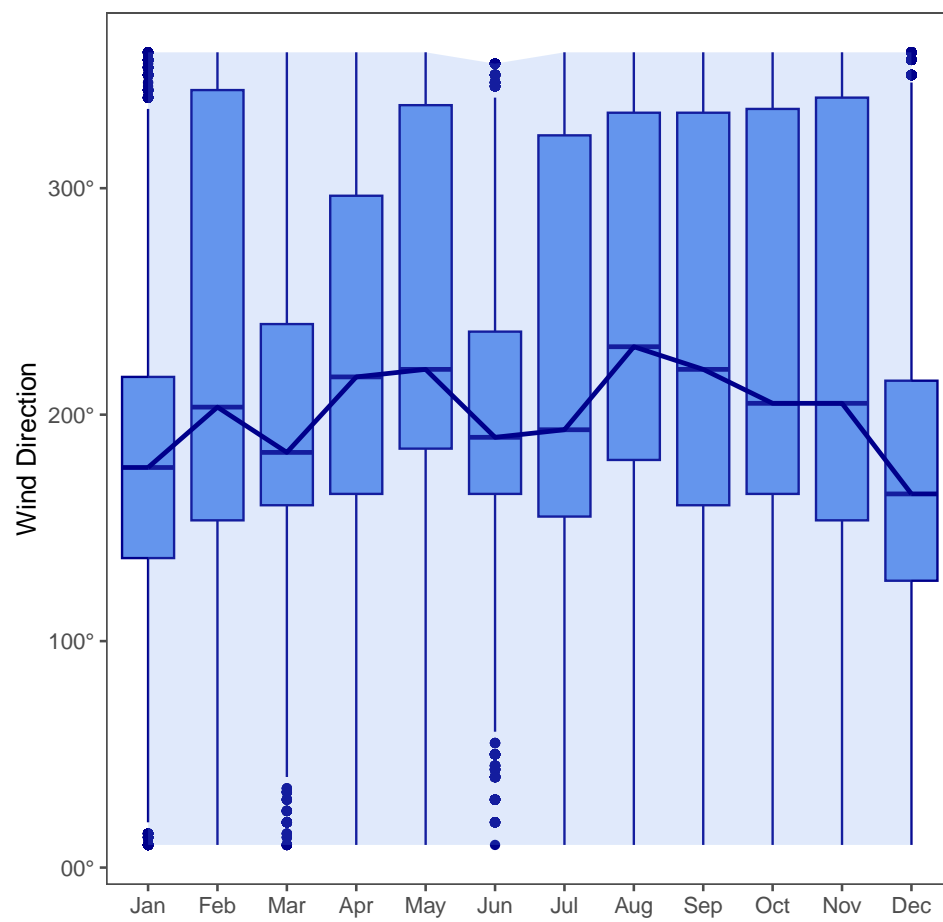




3.5 Wind Direction

	Avg.wind.dir.	Avg.crash.wind.dir.
1	19.1302	21.163



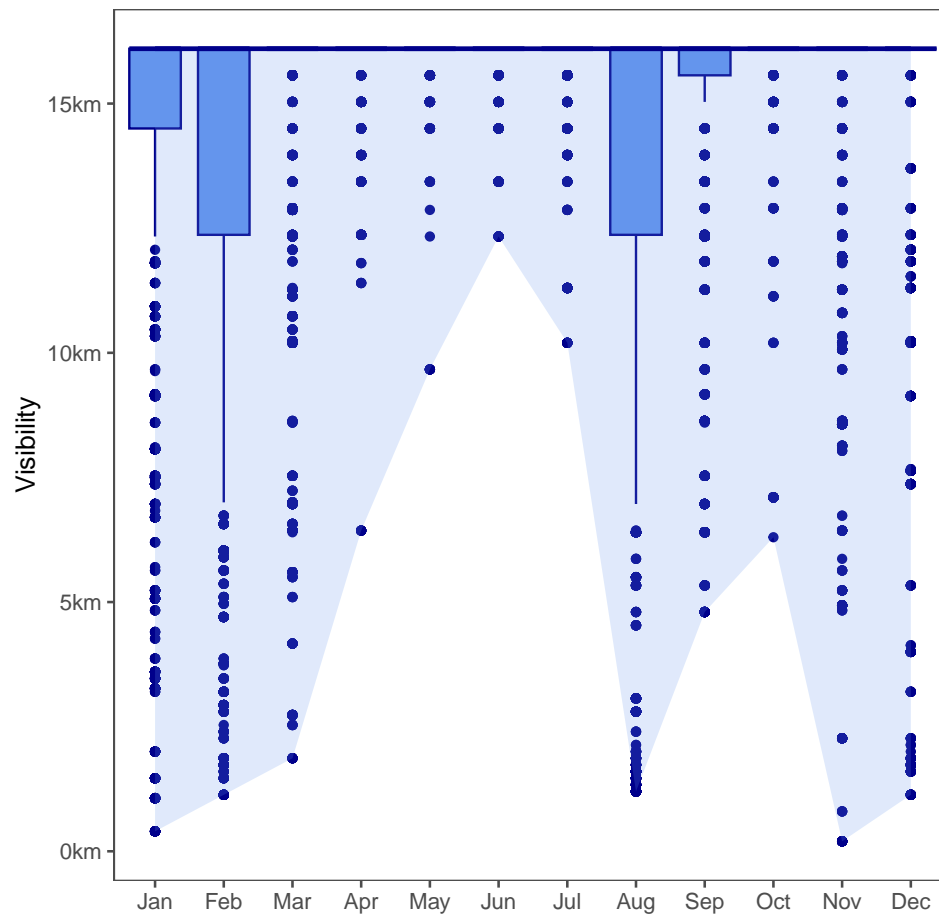


3.6 Visibility

```
Avg.visibility Avg.crash.visibility
1      15.10429      15.14964
```

```
[1] "Very little differences in visibility..."
```

```
[1] "Density plot isn't helpful because cases are so spread out."
```



3.7 Air Pressure

4 Crash Subtypes

4.1 All Combined

* nrow * intersection flag * months * day of the week * crash severity * street name * total victims
* avg temp, "Rel.Hum....", "Precip..Amount..mm.", "Wind.Dir..10s.deg.", "Wind.Spd..km.h.",
"Visibility..km.", "Stn.Press..kPa."

4.2 Cyclist Crashes

4.3 Animal Crashes

4.4 Heavy Vehicle Crashes

4.5 Motorcycle Crashes

4.6 Parked Vehicle Crashes

4.7 Pedestrian Crashes

