

Ferry Curious or How I learned to stop worrying and accept WSDOT

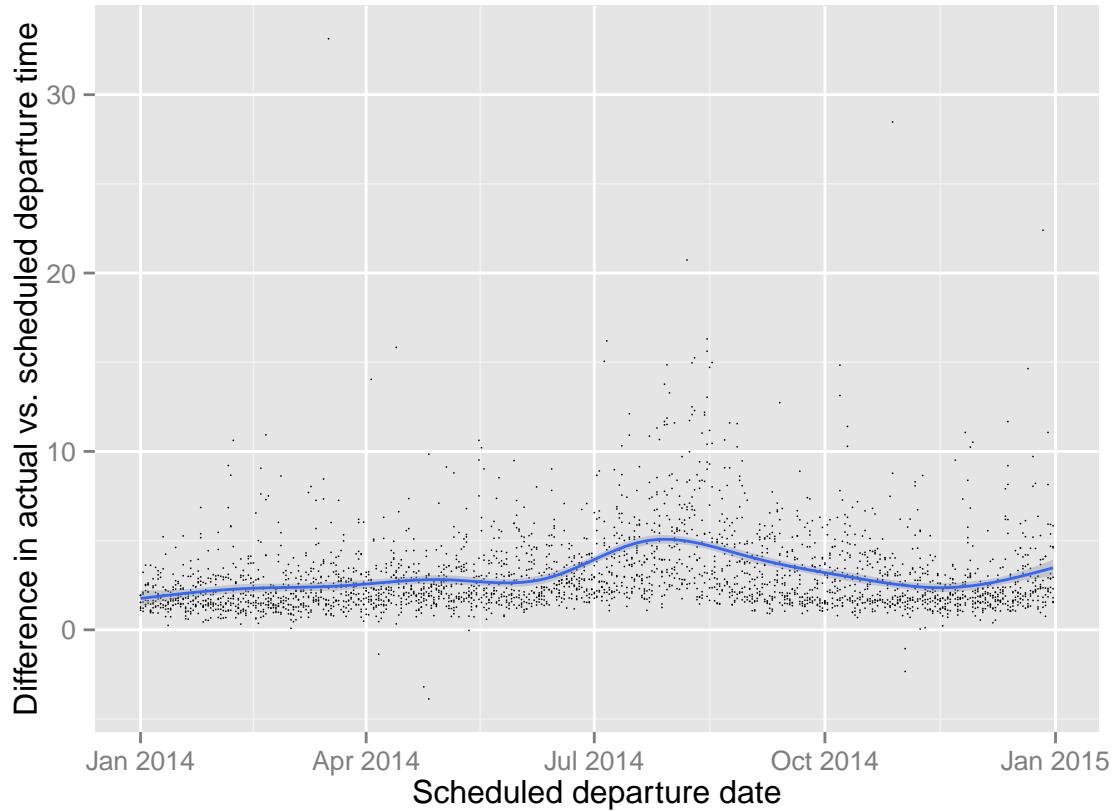
From your friends at SLED analytics

We have long been interested in WSDOT ferry data, specifically on-time rates, and finally decided to file a Public Records Request in an attempt to gain access to this data. Here we present findings for on-time rates for calendar year 2014.

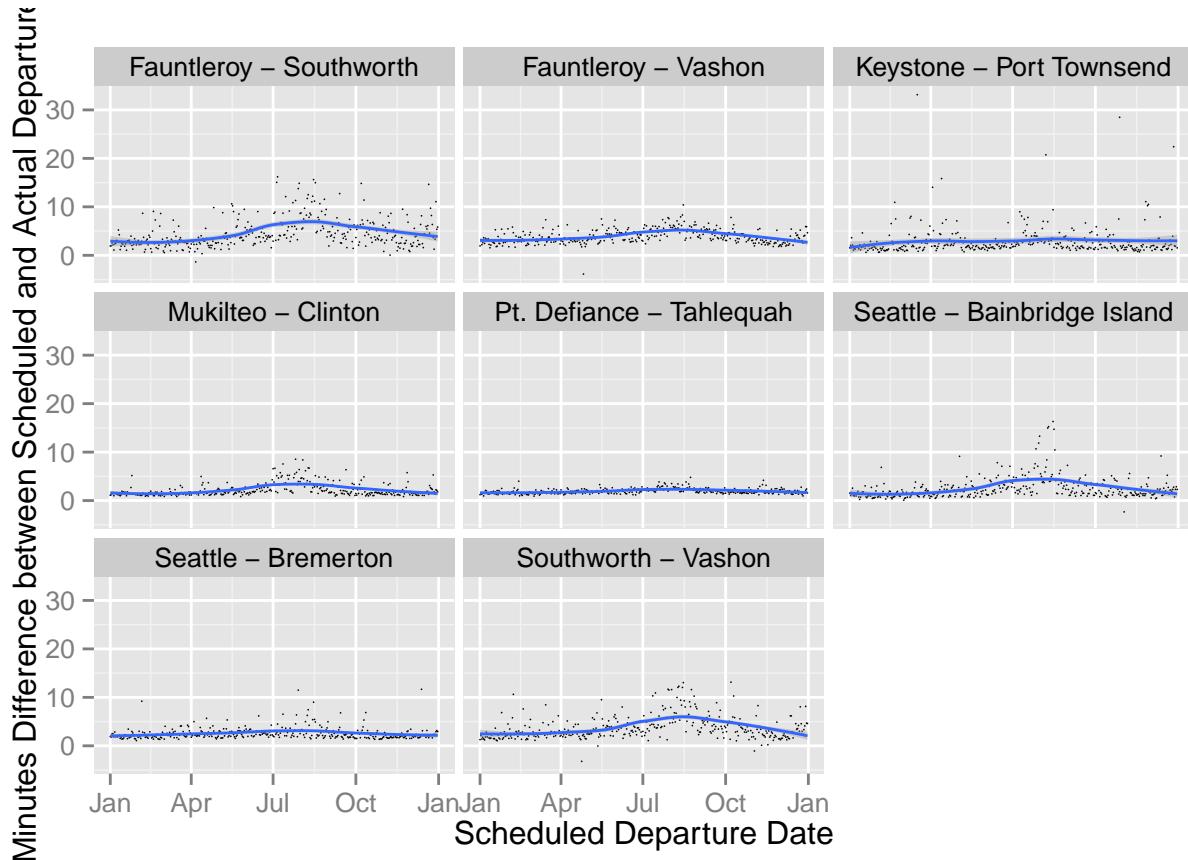
First a few caveats: Because WSDOT runs a [holiday schedule](#) on most Federal holidays, we specially accounted for those specific dates. Also, for this report we solely focused on the routes in Central Puget Sound (ie non-Orcas Islands routes).

On time departures

WSDOT uses GPS trackers on each ferry and is therefore able to record arrival and departure times to the second, so we initially looked at the difference in scheduled departure time versus actual departure time.

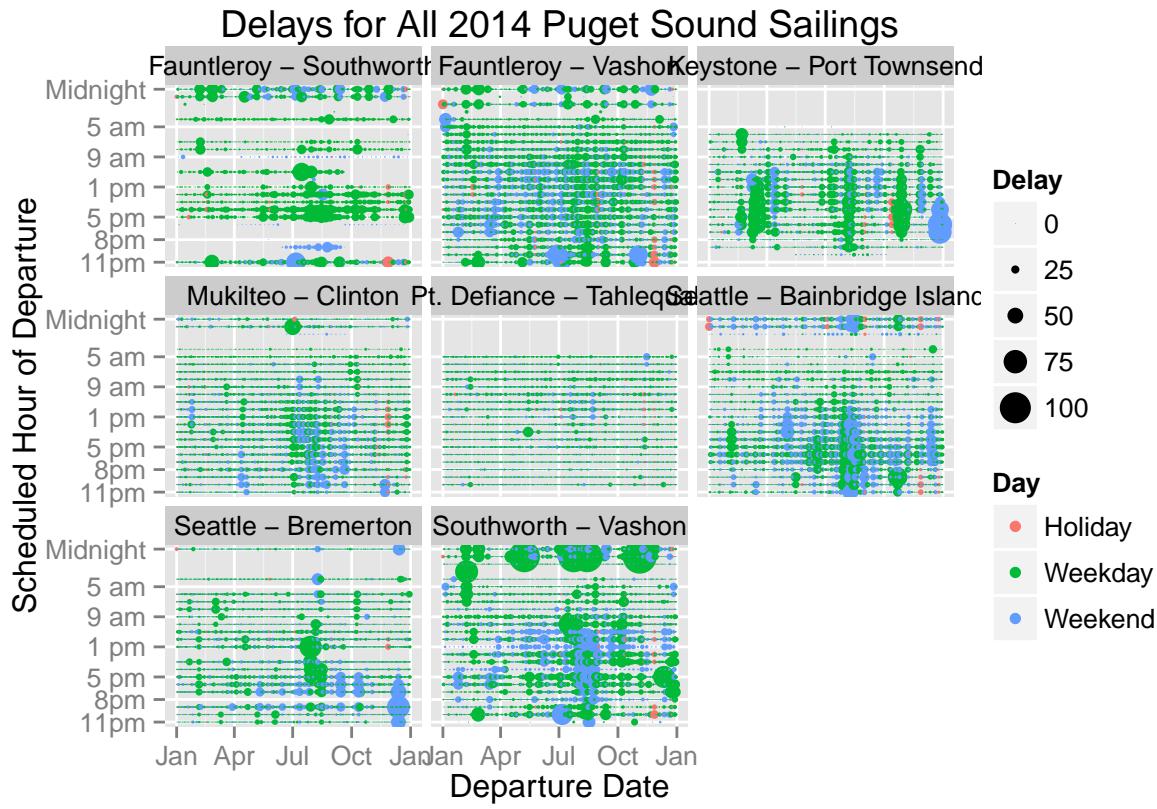


Each point represents the mean departure delay on that date for all ferry routes. We used linear regression to add a trend line to graphically show any trends present in departure time delay. As a whole, the data shows minimal variation in departure time with a large bump in departure delay towards the end of summer. In 2014, the average daily departure delay was approximately 3 minutes for all ferry routes of interest.



We then stratified the initial figure into the eight routes of interest as well as added a trend line for each route.

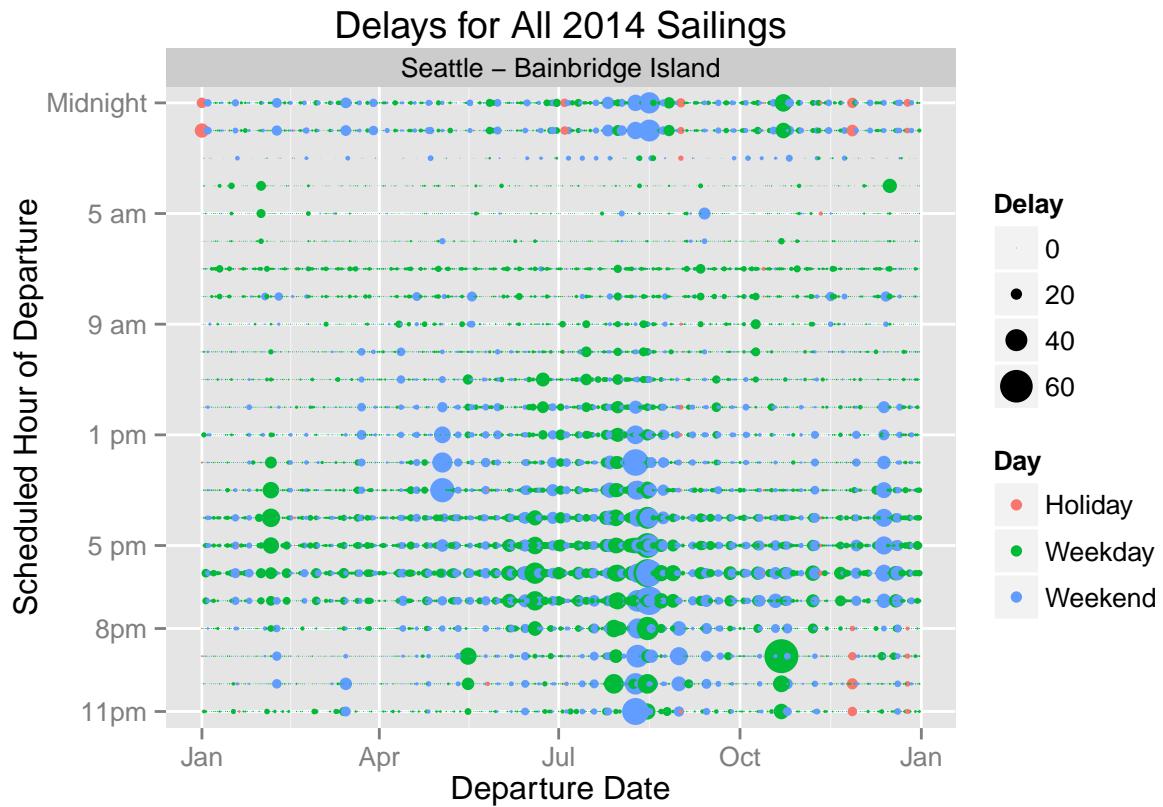
Next, we focused only on time delays over the course of the day while accounting for types of days (weekdays,



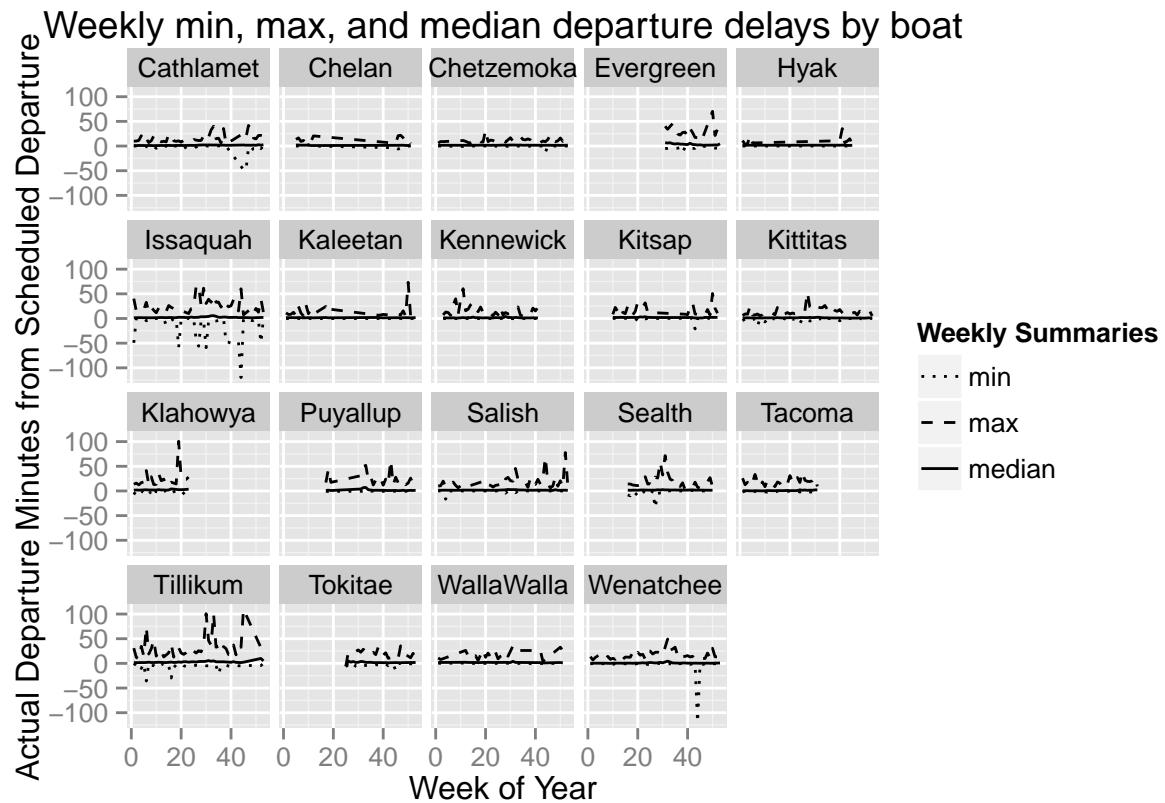
weekends or holidays).

The above plot shows both number of minutes of delay colored by the type of day for every hour per day for each of the eight routes of interest. Again we see the variance in departure delay as observed in the previous plot but we can also see that certain routes (e.g. Seattle - Bainbridge Island) tend to have more delays on the weekend sailings while other routes such as Keystone - Port Townsend see more departure delays during the week.

Seattle-Bainbridge Island

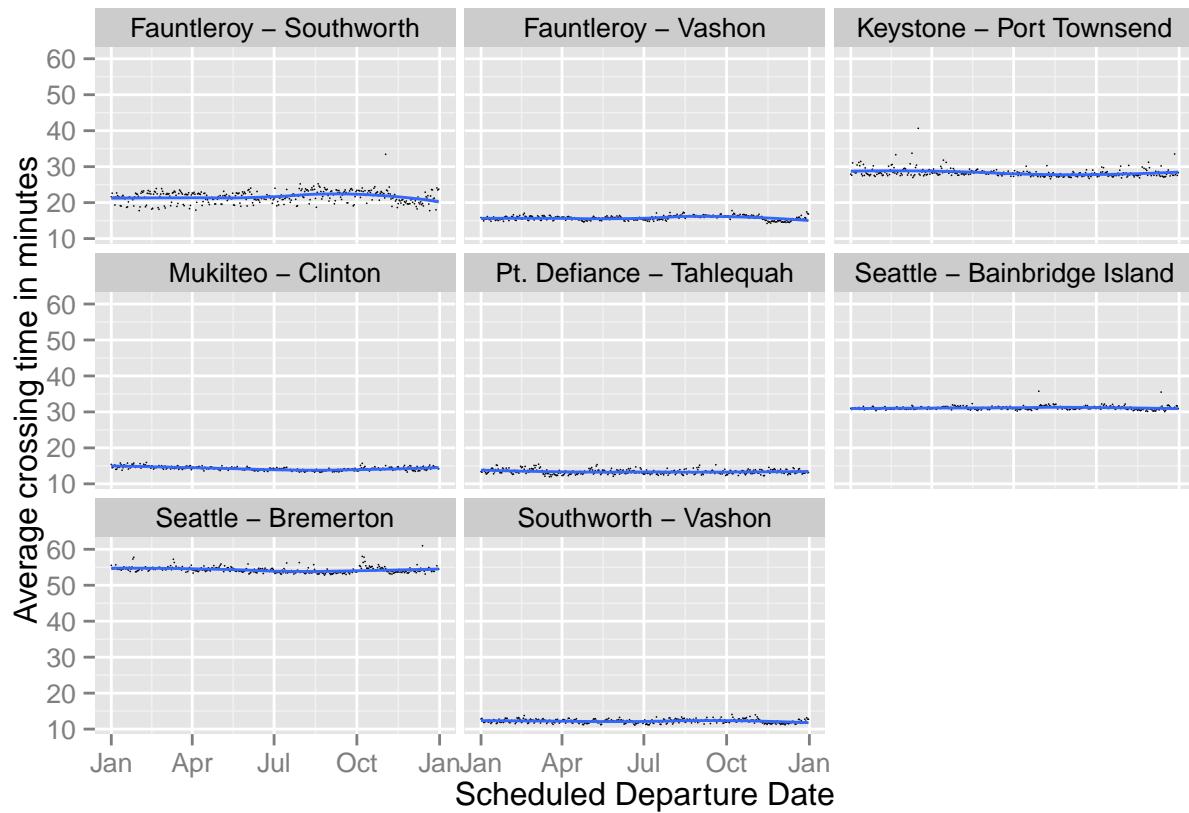


Boat level analysis



WSDOT also tracks which boat is used on each route which allows for a look at overall efficiencies for each ferry boat. Interesting to observe how often WSDOT swaps out different boats.

Average crossing times



The above figures show that most ferries are very consistent after departure with the exception of the Fauntleroy - Southworth and Keystone - Port Townsend routes, which show a fair amount of variation. Because these figures only look at crossing times, any variation in trip length is due to factors that occurred while sailing.

Conclusion

In conclusion, we observed that WSDOT ferries are generally very consistent and major delays can likely be easily predicted (such as a summer weekend afternoon sailing). We did not add any external covariates such as weather or automobile traffic which might have been informative in helping to explain these trends.