List of Tables

```
## [1] "/home/guest/JEG_ENV872_EDA_FinalProject"
```

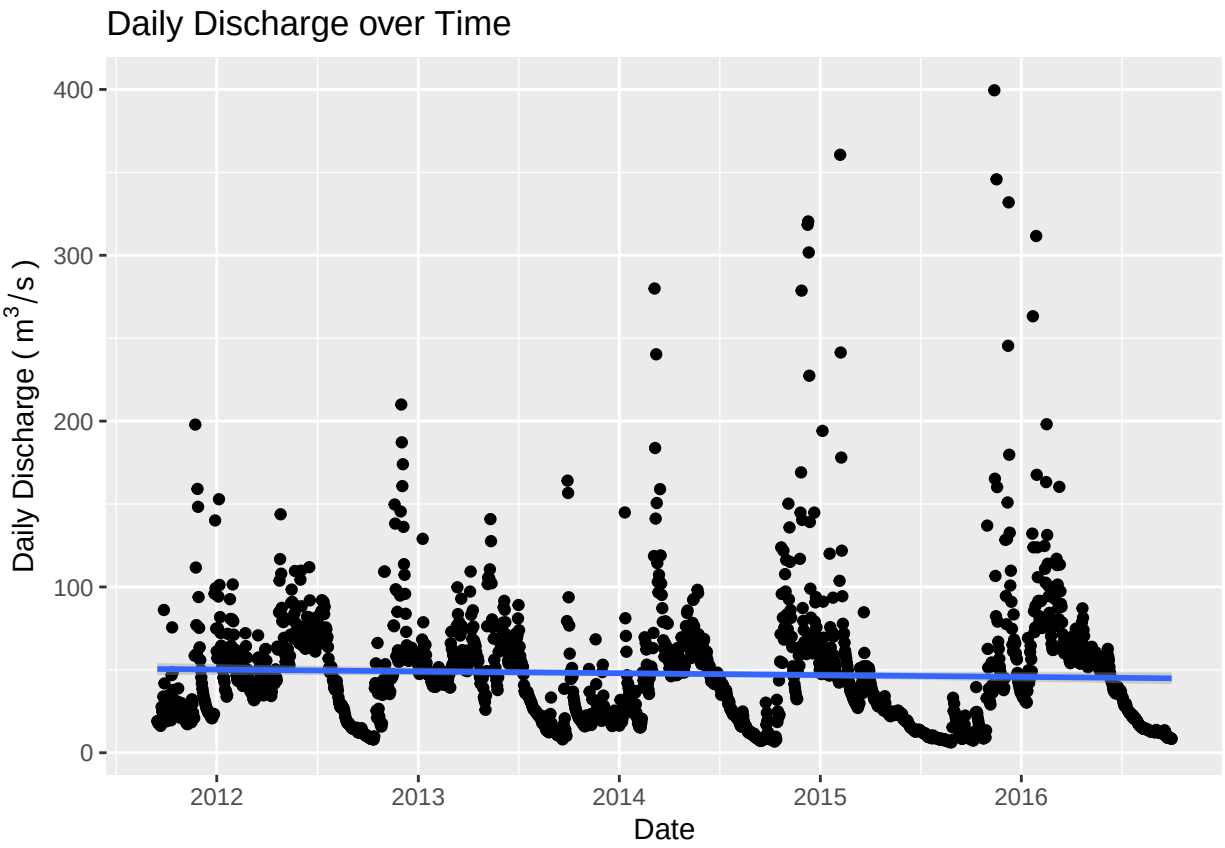
Rationale and Research Questions

Dataset Information

Exploratory Analysis

Exploratory Analysis: Sediment Loads Data

Variable	Minimum	Median	Mean	Maximum
Date	2011-09-15	2014-03-24	2014-03-24	2016-09-30
Discharge m3/s	6.33	41.70	47.70	399.50
Suspended Sediment Concentration (mg/L)	0.227	169.500	945.363	13819.790
Average Fine SS Fraction	0.4100	0.6850	0.6896	0.9940
Total SS Load (tonnes)	0.1	634.4	7750.9	429806.7
Fine SS Load (tonnes)	0.1	457.9	4533.7	269484.4
Sand SS Load (tonnes)	0.00	186.70	3217.18	160322.30
Ungauged Bedload (tonnes)	-7710	139	1976	104444
Total Sediment Discharge (tonnes)	0.1	779.8	9886.9	466989.1



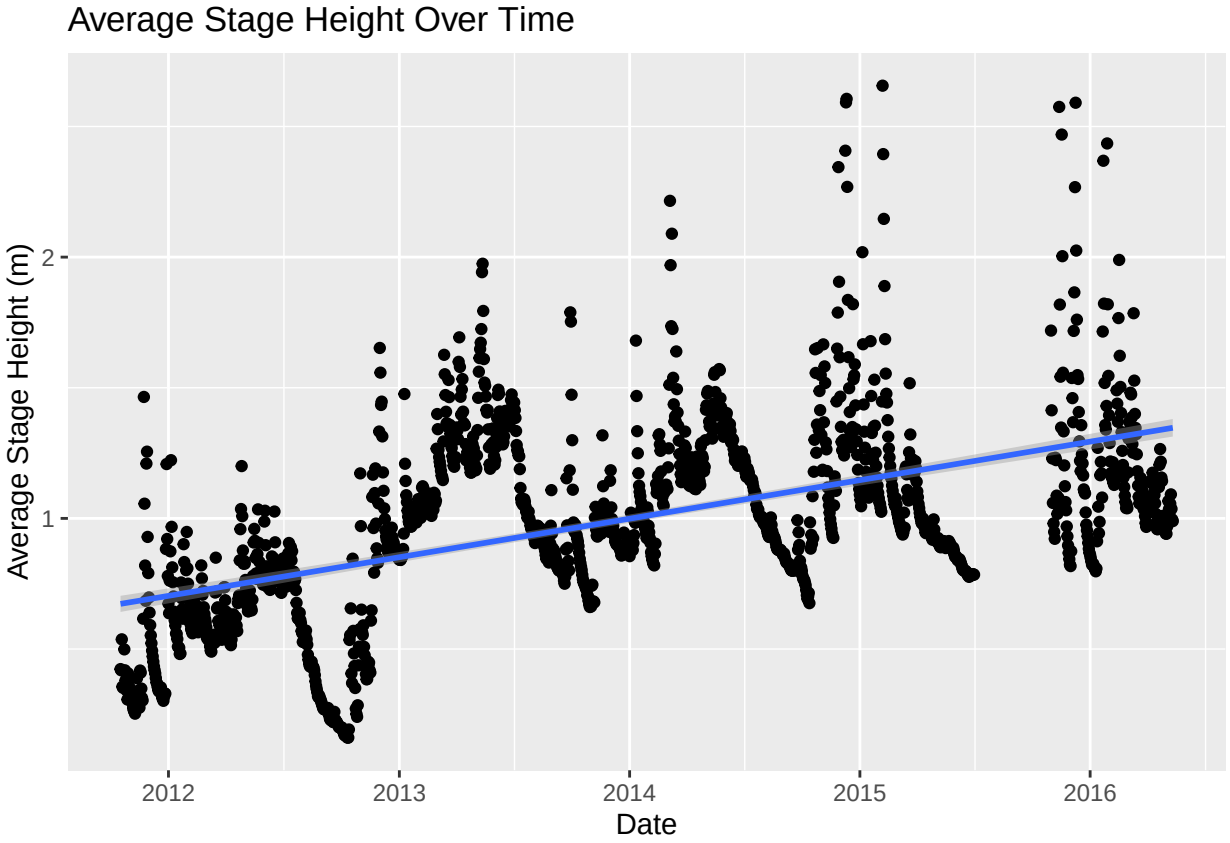
	Estimate	Std. Error	t value	Pr(>|t|)
Intercept	96.818629	27.387137	3.535	0.000418 ***
Date	-0.003041	0.001695	-1.794	0.072918 .
R-squared				0.001746
Adj R-squared				0.001204

Discharge shows strong seasonal trends, with an insignificant slight decrease over time (p value = 0.072918).

Seasonal trends appear to become stronger with time. Time series analysis will remove seasonal trends in the data and reveal changes before and after dam removal

Exploratory Analysis: Streamgage Data

Variable	Minimum	Median	Mean	Maximum
Date	2011-10-17	2013-11-27	2013-12-11	2016-05-11
Average Stage Height (m)	0.1608	0.9752	0.9908	2.6560



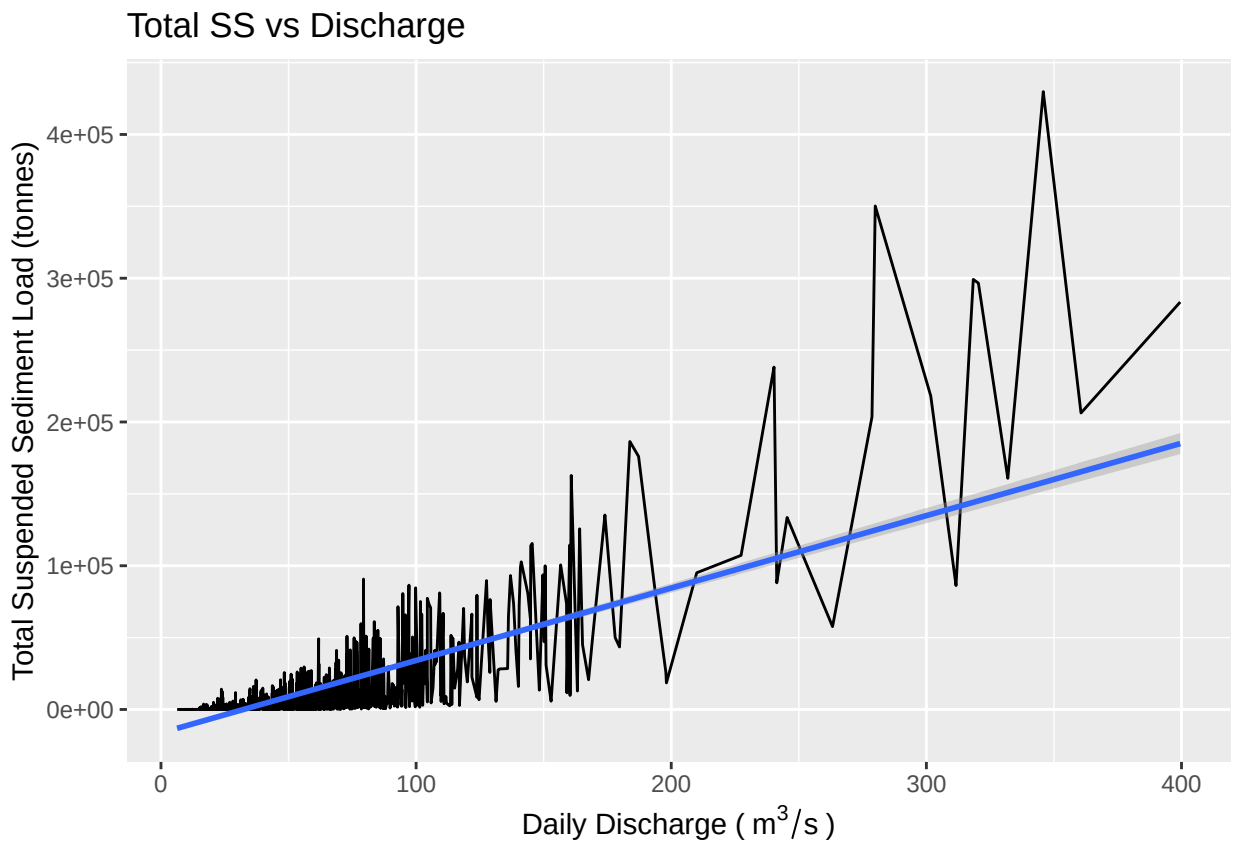
	Estimate	Std. Error	t value	Pr(>|t|)
Intercept	-5.493e+00	2.753e-01	-19.95	<2e-16 ***
Date	4.040e-04	1.715e-05	23.56	<2e-16 ***
R-squared				0.2646
Adj R-squared				0.2641

\caption{stage table}

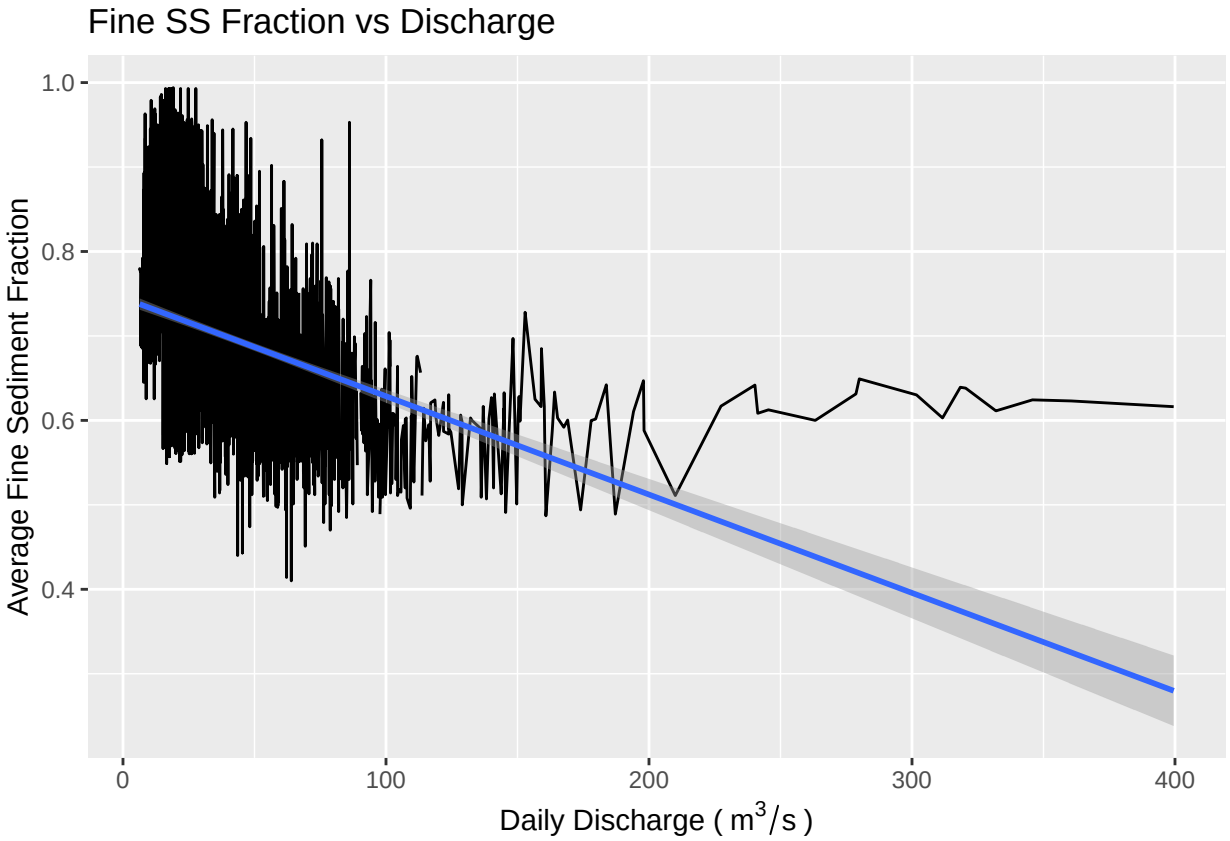
Stage height shows strong seasonal trends, with a significant increase over time (p value <2e-16) Time series analysis will remove seasonal trends and reveal changes before and after dam removal.

Analysis

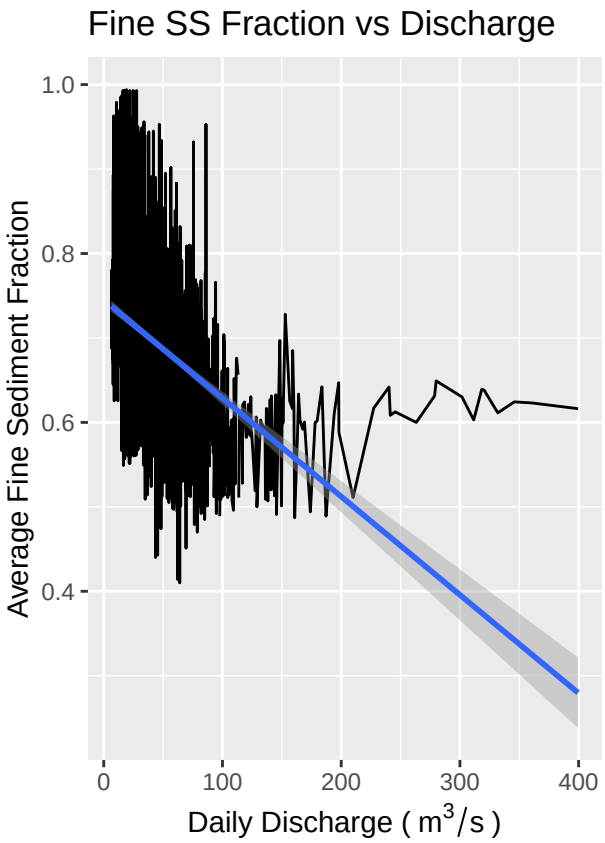
Question 1: How Does Are Daily Water and Sediment Discharges Related?

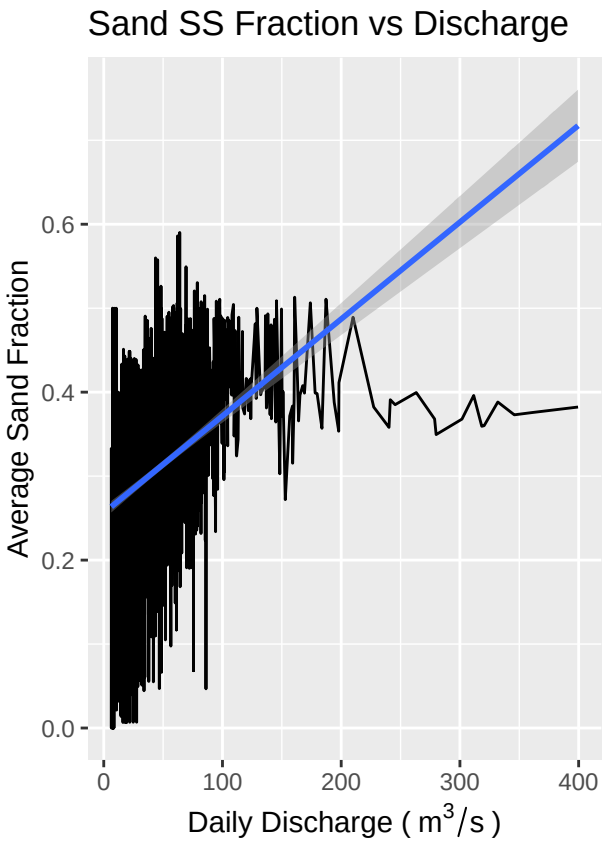


	Estimate	Std. Error	t value	Pr(>|t|)
Intercept	-16278.35	644.40	-25.26	<2e-16 ***
Discharge	503.73	10.49	48.03	<2e-16 ***
R-squared				0.5561
Adj R-squared				0.5559



	Estimate	Std. Error	t value	Pr(>|t|)
Intercept	7.451e-01	3.693e-03	201.73	<2e-16 ***
Discharge	-1.165e-03	6.014e-05	-19.36	<2e-16 ***
R-squared				0.1699
Adj R-squared				0.1695


Fine SS Fraction vs Discharge
Average Fine Sediment Fraction
1.0
0.8
0.6
0.4
0
100
200
300
400
Daily Discharge (m3/s)


Sand SS Fraction vs Discharge
Average Sand Fraction
0.6
0.4
0.2
0.0
0
100
200
300
400
Daily Discharge (m3/s)