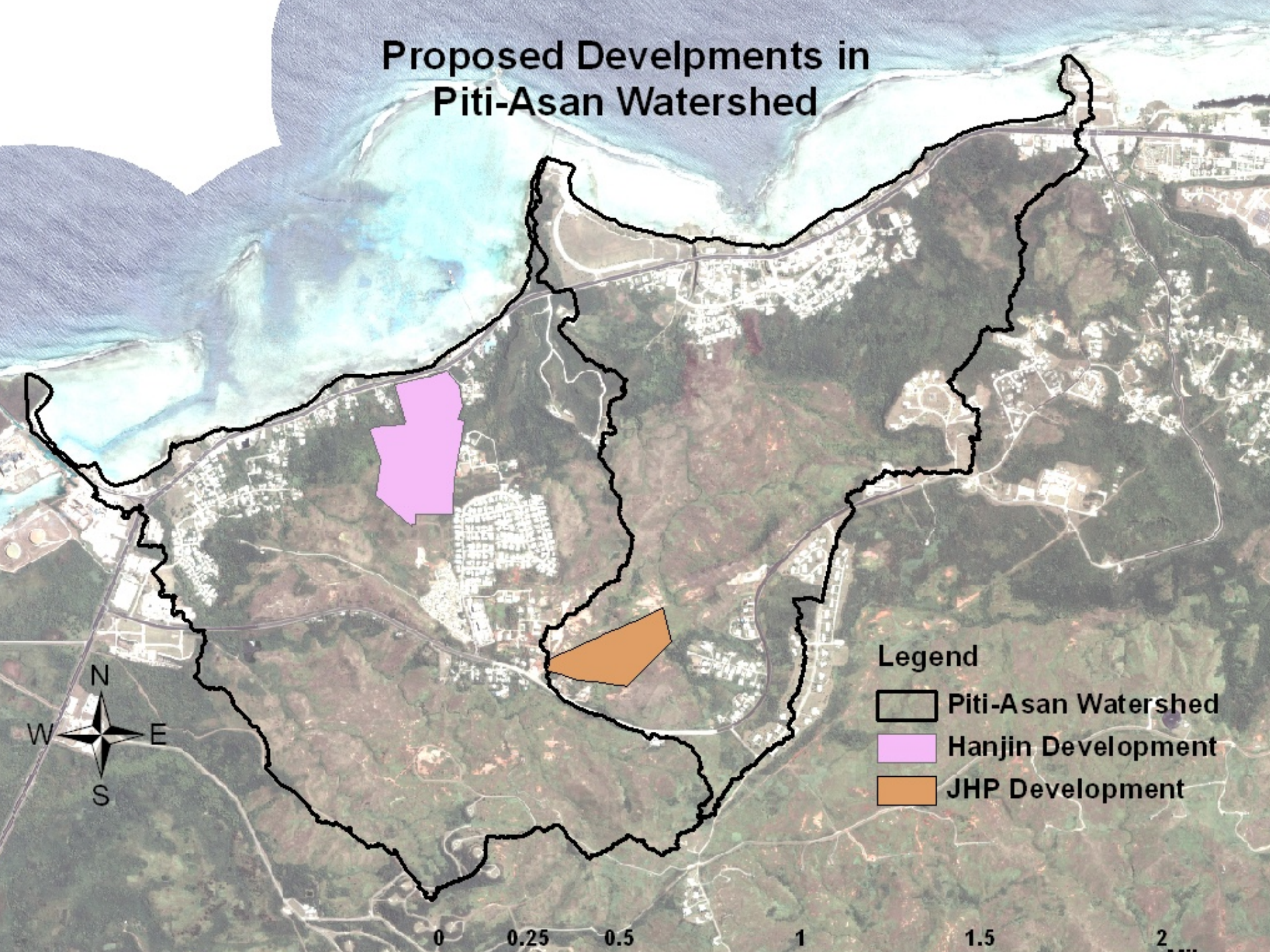
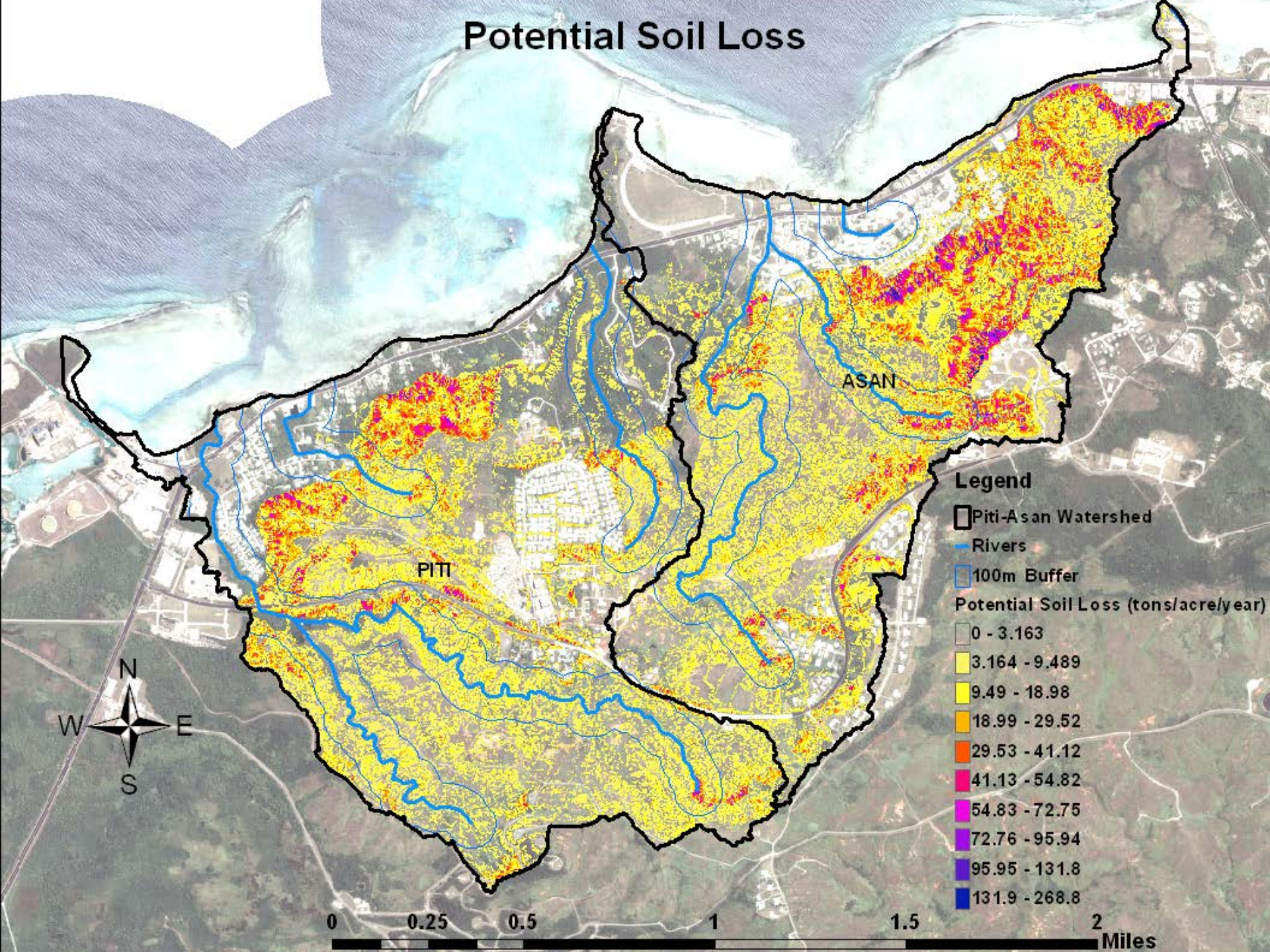
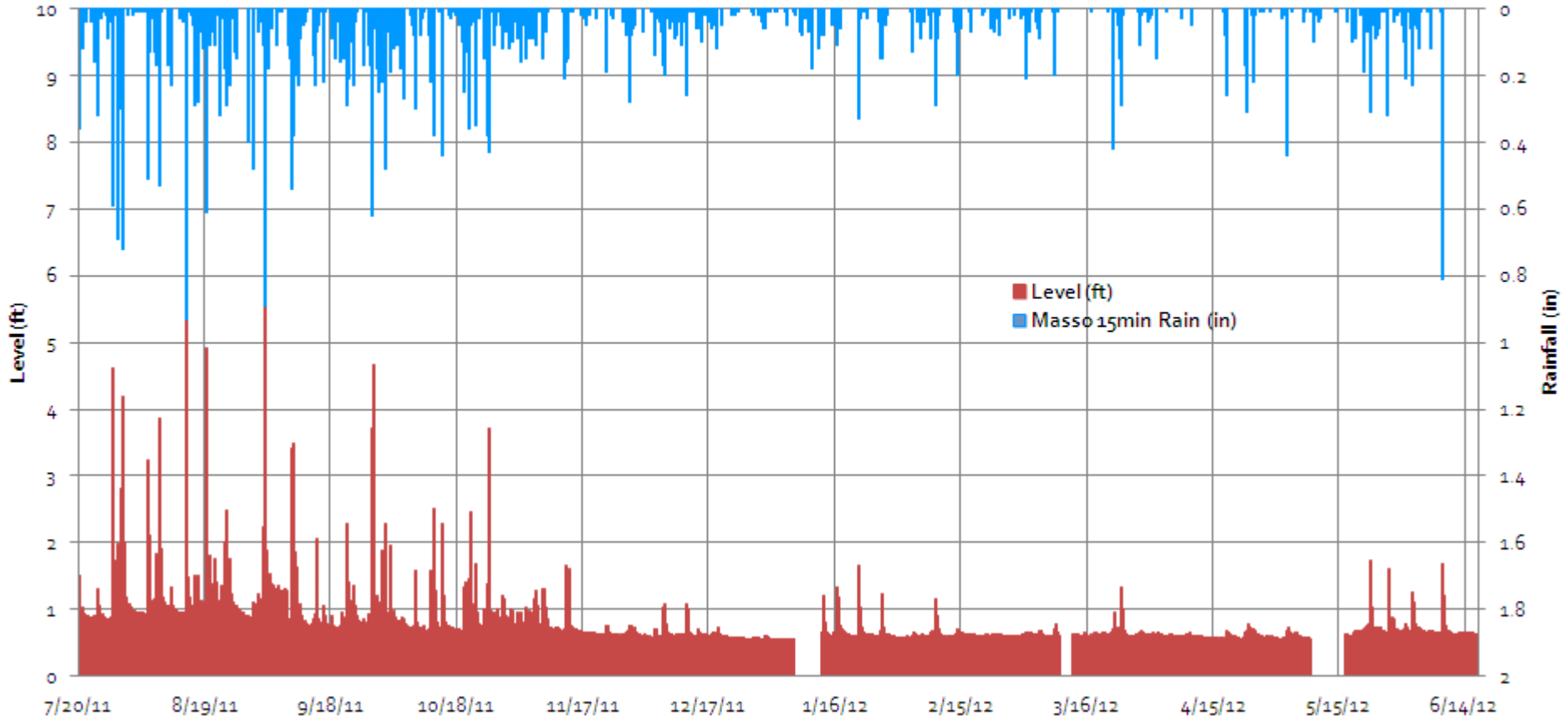

Problems associated with construction

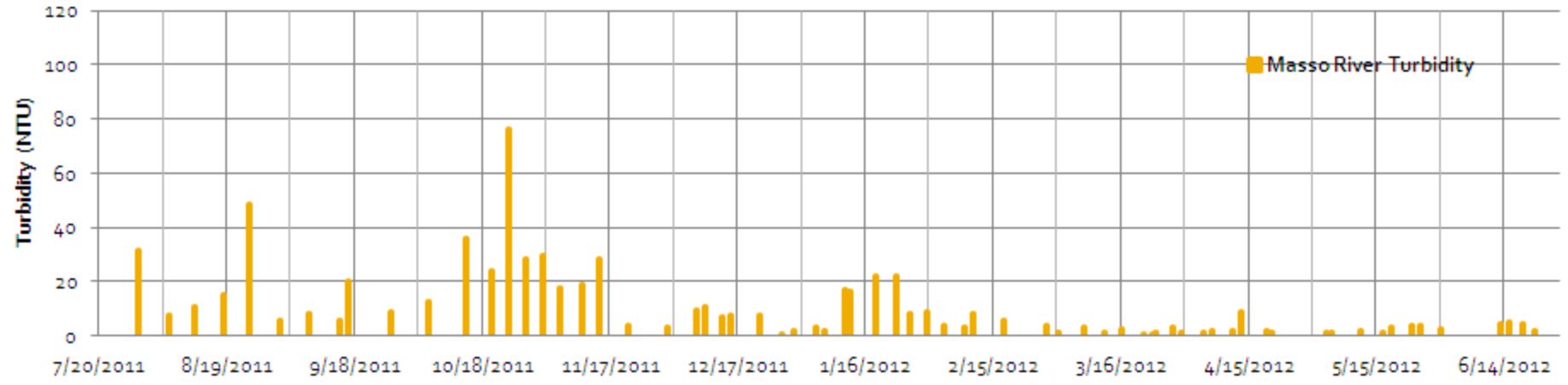

Proposed Develpments in
Piti-Asan Watershed
N
W
E
S
Legend
Piti-Asan Watershed
Hanjin Development
JHP Development
0
0.25
0.5
1
1.5
2

Potential Soil Loss

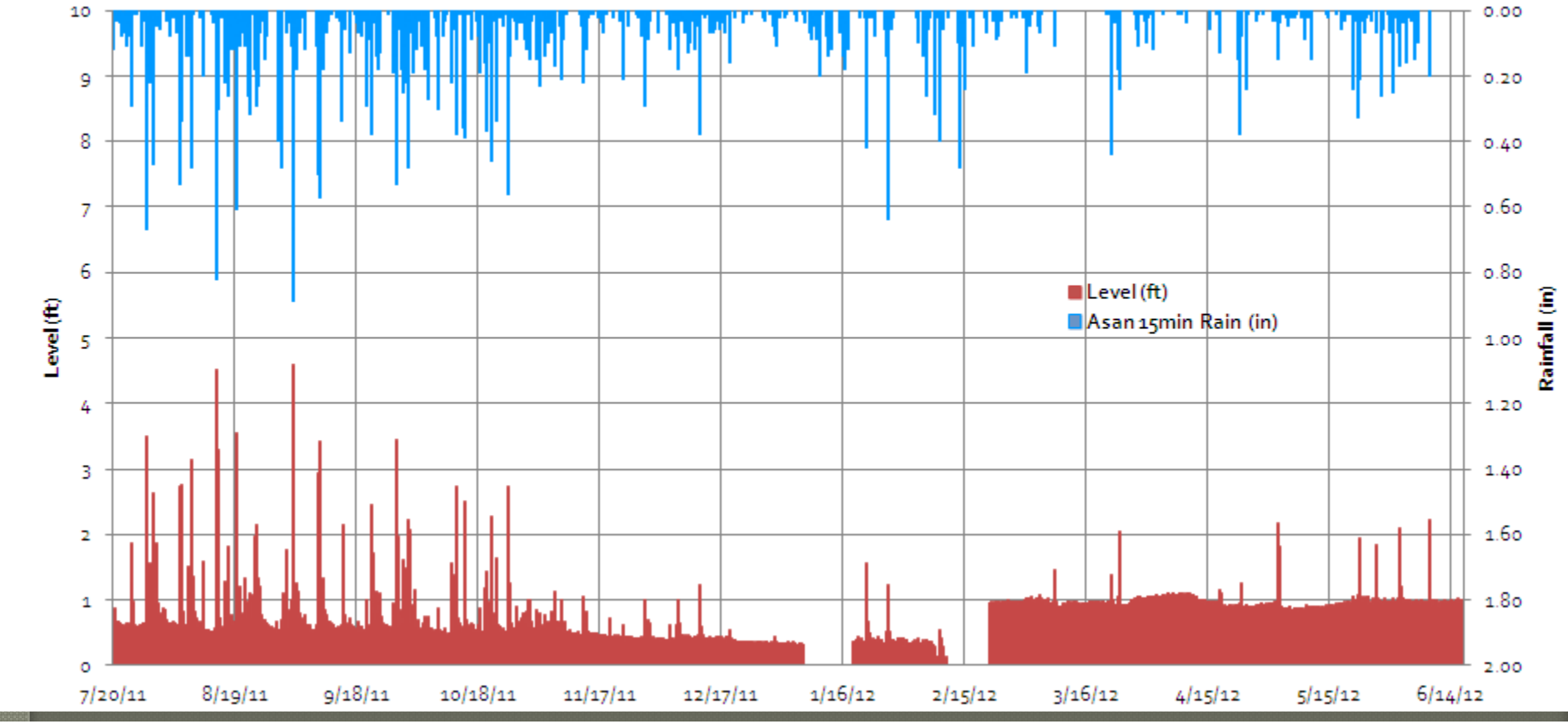


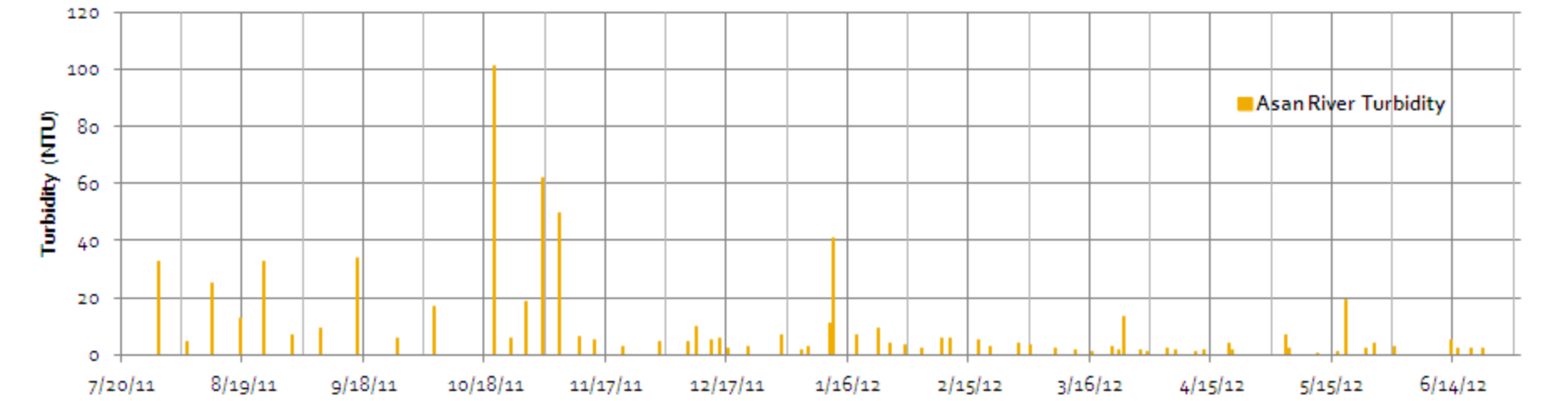
Piti Watershed

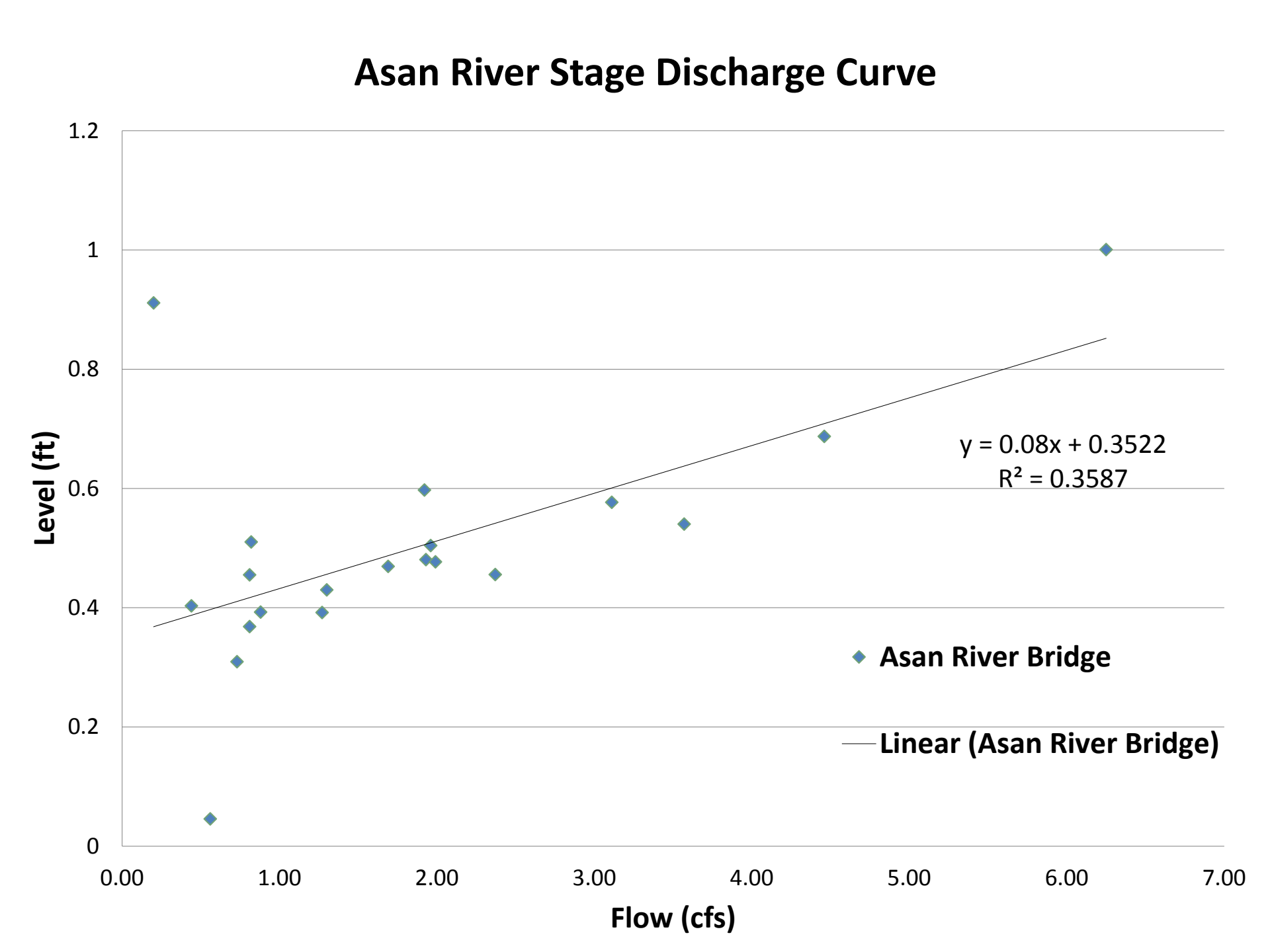




Asan Watershed






Asan River Stage Discharge Curve
1.2
1
0.8
0.6
0.4
0.2
0
Level (ft)
0.00
1.00
2.00
3.00
4.00
5.00
6.00
7.00
Flow (cfs)
y = 0.08x + 0.3522
R² = 0.3587
Asan River Bridge
Linear (Asan River Bridge)

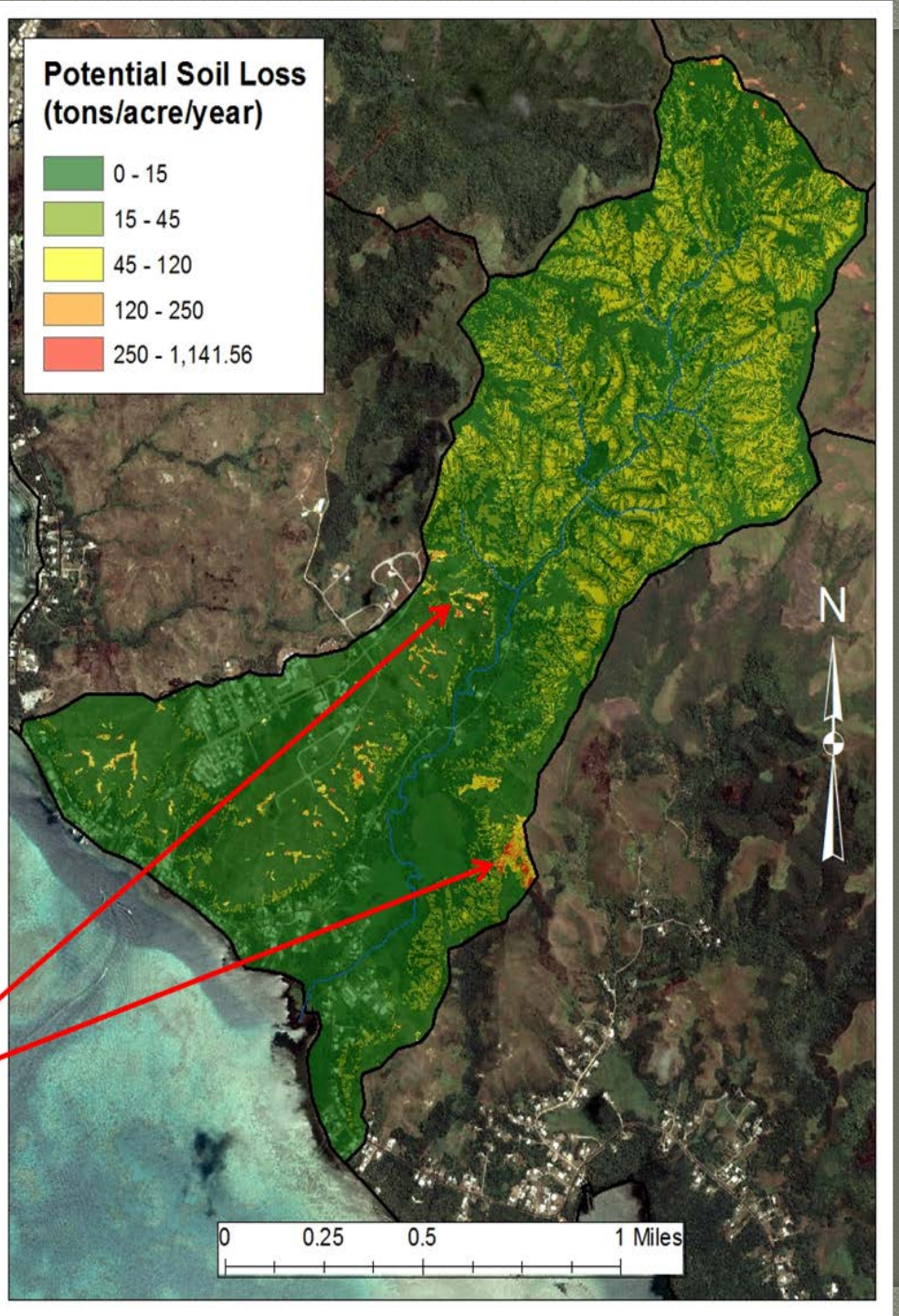
Field Observations - Geus

Geus River before Tropical Storm Halong (7/18/2014).

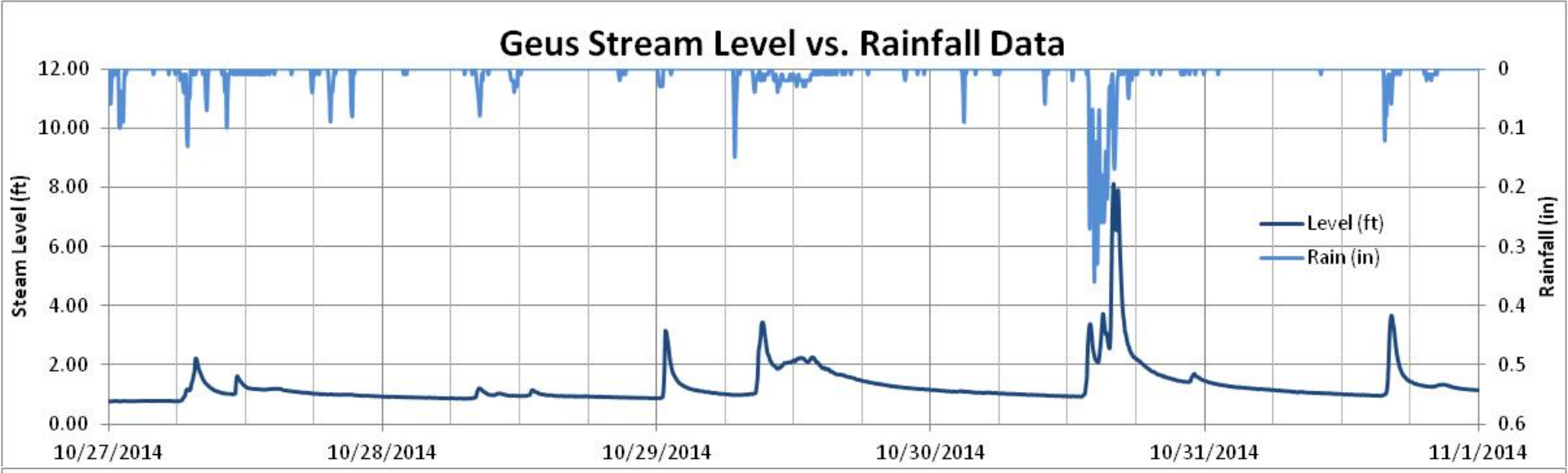
Same location after Tropical Storm Halong (7/30/2014).

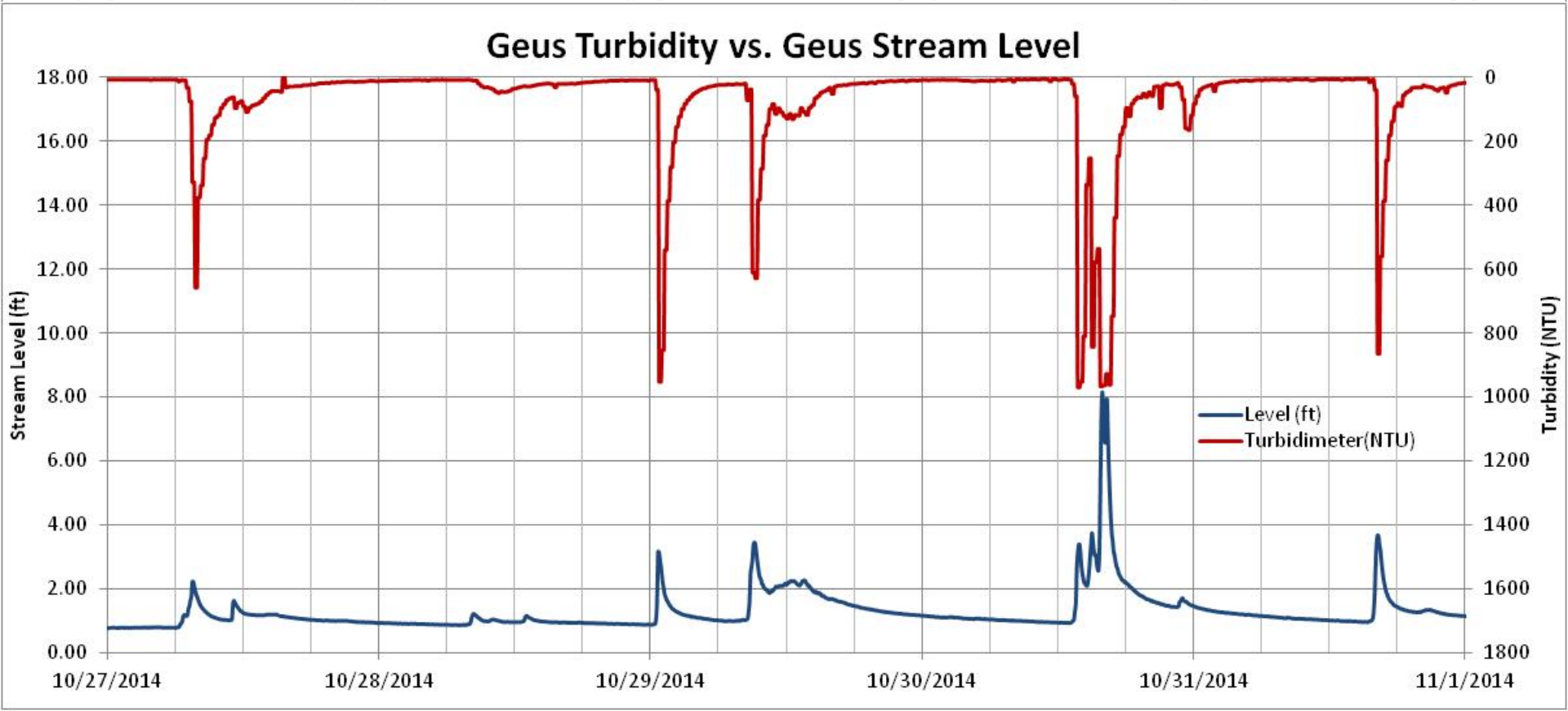
Natural Erosion Contribution

Problems associated with human activities



Areas that contributes the most soil erosion


Geus Stream Level vs. Rainfall Data
Steam Level (ft)
Rainfall (in)
12.00
10.00
8.00
6.00
4.00
2.00
0.00
0
0.1
0.2
0.3
0.4
0.5
0.6
Level (ft)
Rain (in)
10/27/2014
10/28/2014
10/29/2014
10/30/2014
10/31/2014
11/1/2014


Geus Turbidity vs. Geus Stream Level
Stream Level (ft)
Turbidity (NTU)
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
0
200
400
600
800
1000
1200
1400
1600
1800
Level (ft)
Turbidimeter(NTU)
10/27/2014
10/28/2014
10/29/2014
10/30/2014
10/31/2014
11/1/2014

Conclusion

- These 3 Watersheds are very dynamic
- Soil type is very erodible
- Common issues:
  - Natural occurrence
    - Badlands
    - Bank erosion
    - Earthquake
    - Typhoon
  - Human activities
    - Off-Road activities
    - Fire

Recommendations

- Continued monitoring
- Outreach and public education
- Enforcement of erosion control practices
- Management plan may implement certain vegetation and Hydro seeding
- Watershed management and restoration should be continued for other watersheds

Reports

Sh. Khosrowpanah, and John Jocson, 2005. “Environmental Assessment for Non-Point Sources of Pollution for Ugum Watershed”, University of Guam/WERI, Technical Report No.109, December 2005.

Sh. Khosrowpanah, 2015, “Assessment of Turbidity in the Geus River Watershed in Southern Guam”, Water and Environmental Research Institute of the Western Pacific (WERI), University of Guam, Report No 156, 40 pages

Sh. Khosrowpanah, and John Jocson, 2005. “Environmental Assessment for Non-Point Sources of Pollution for Ugum Watershed”, University of Guam/WERI, Technical Report No.109, December 2005.


Thank You