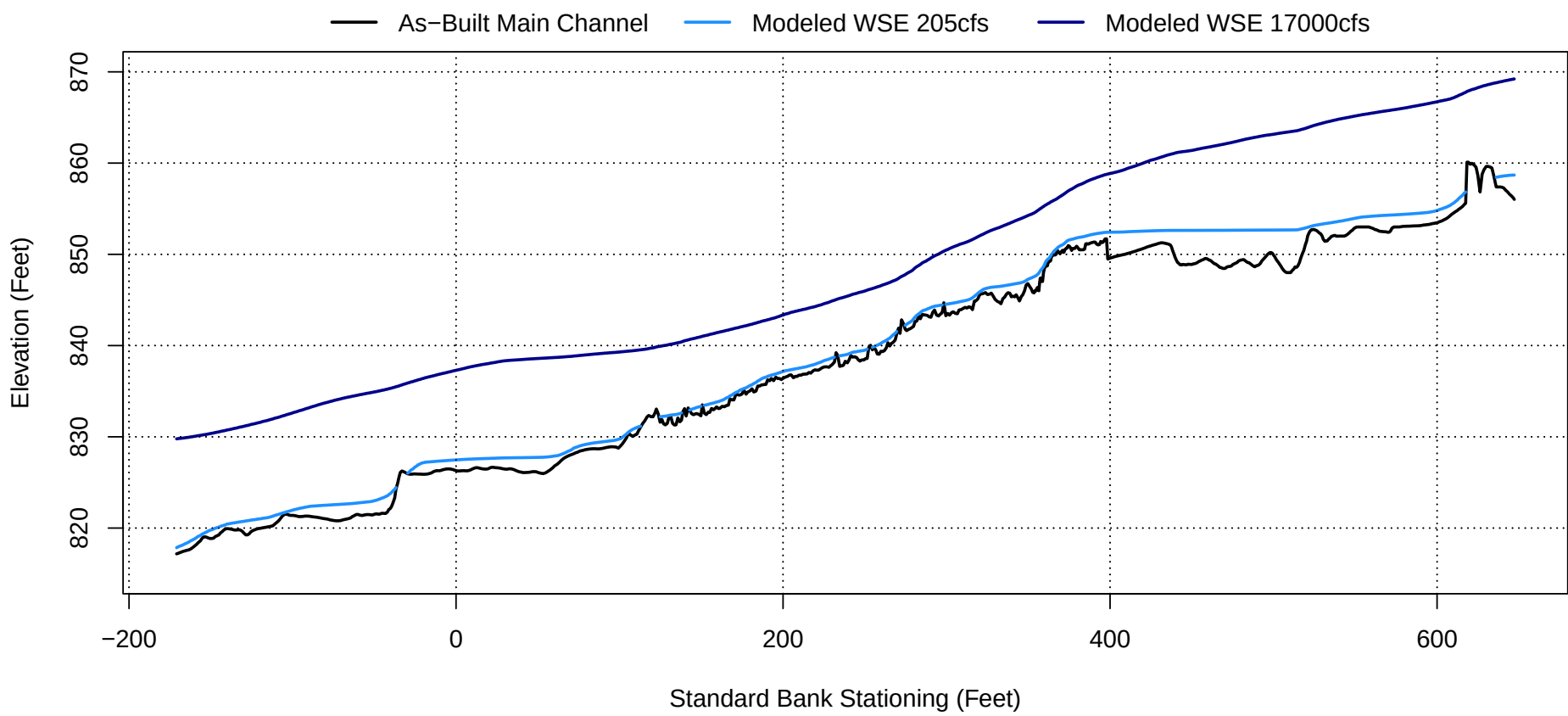


MF Nooksack River Fish Passage Two-Year Monitoring: Topographic and Photographic Analysis

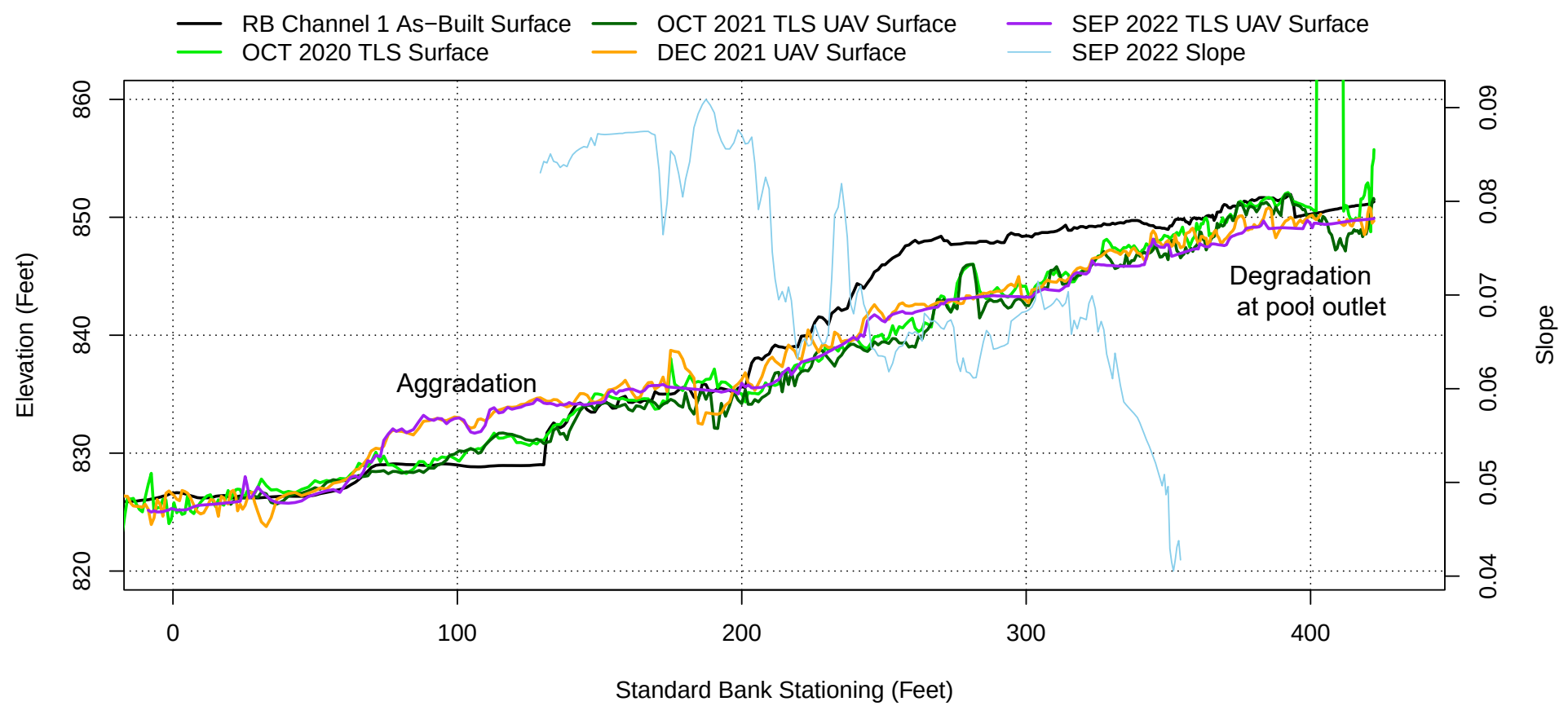
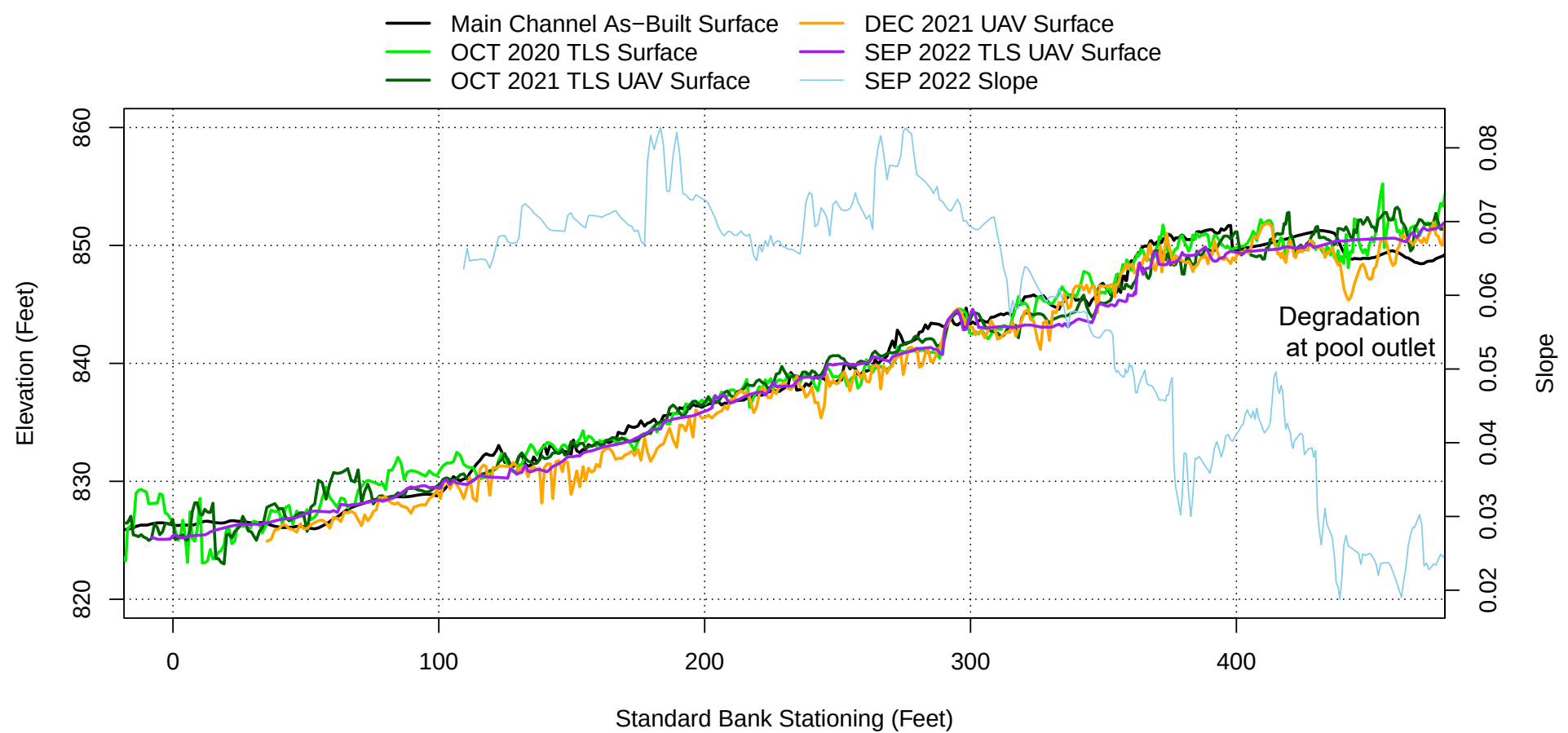
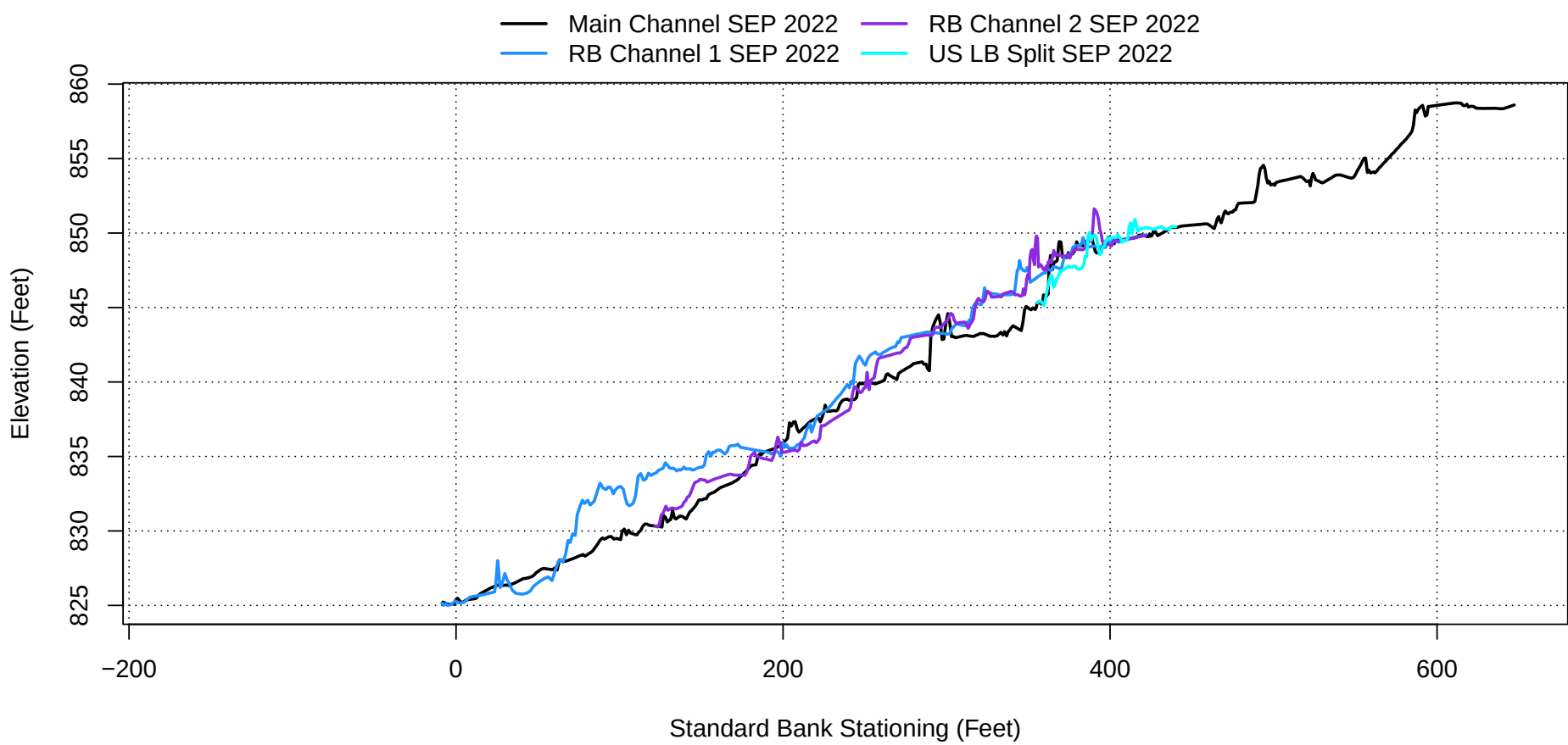
Channel Profiles

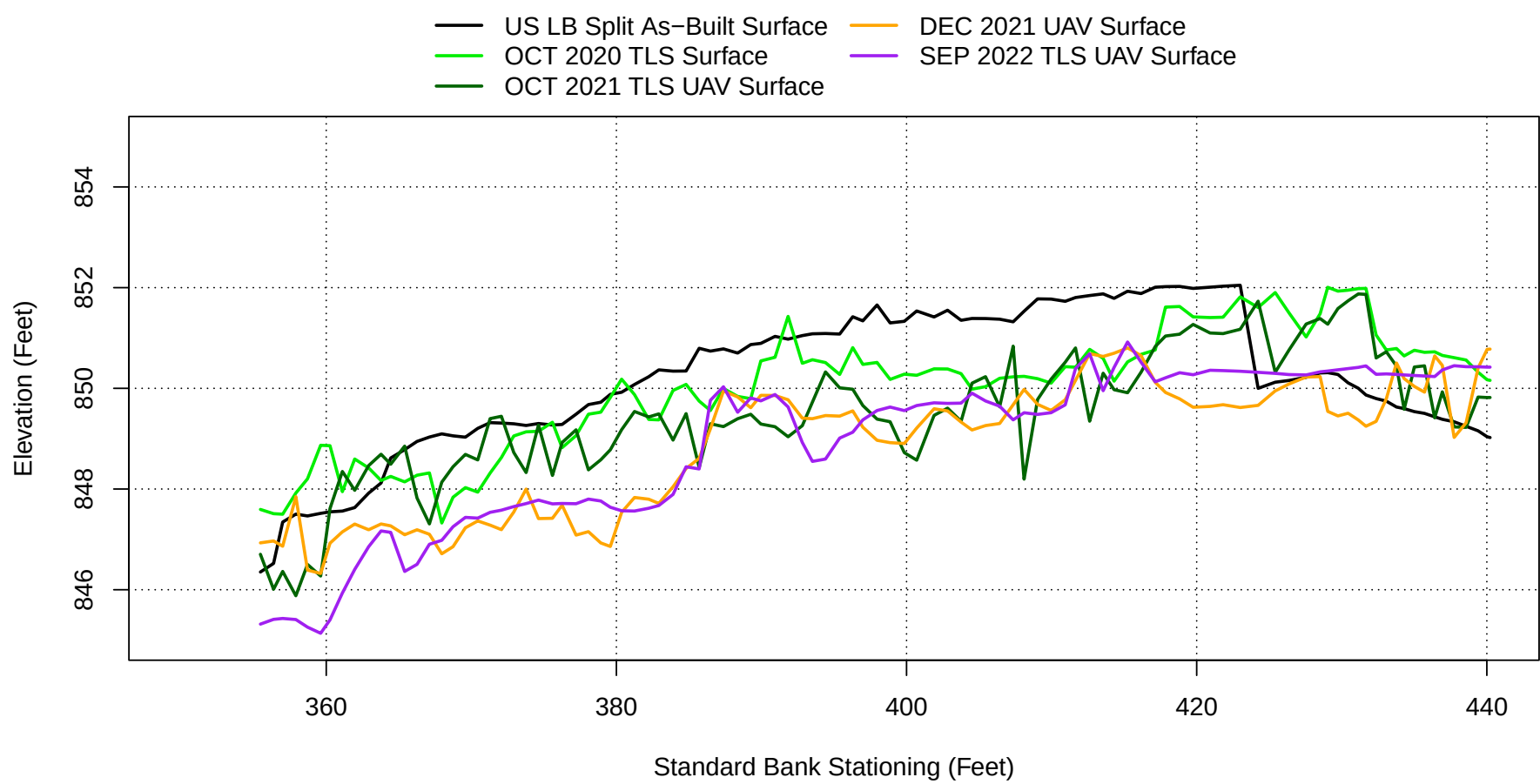
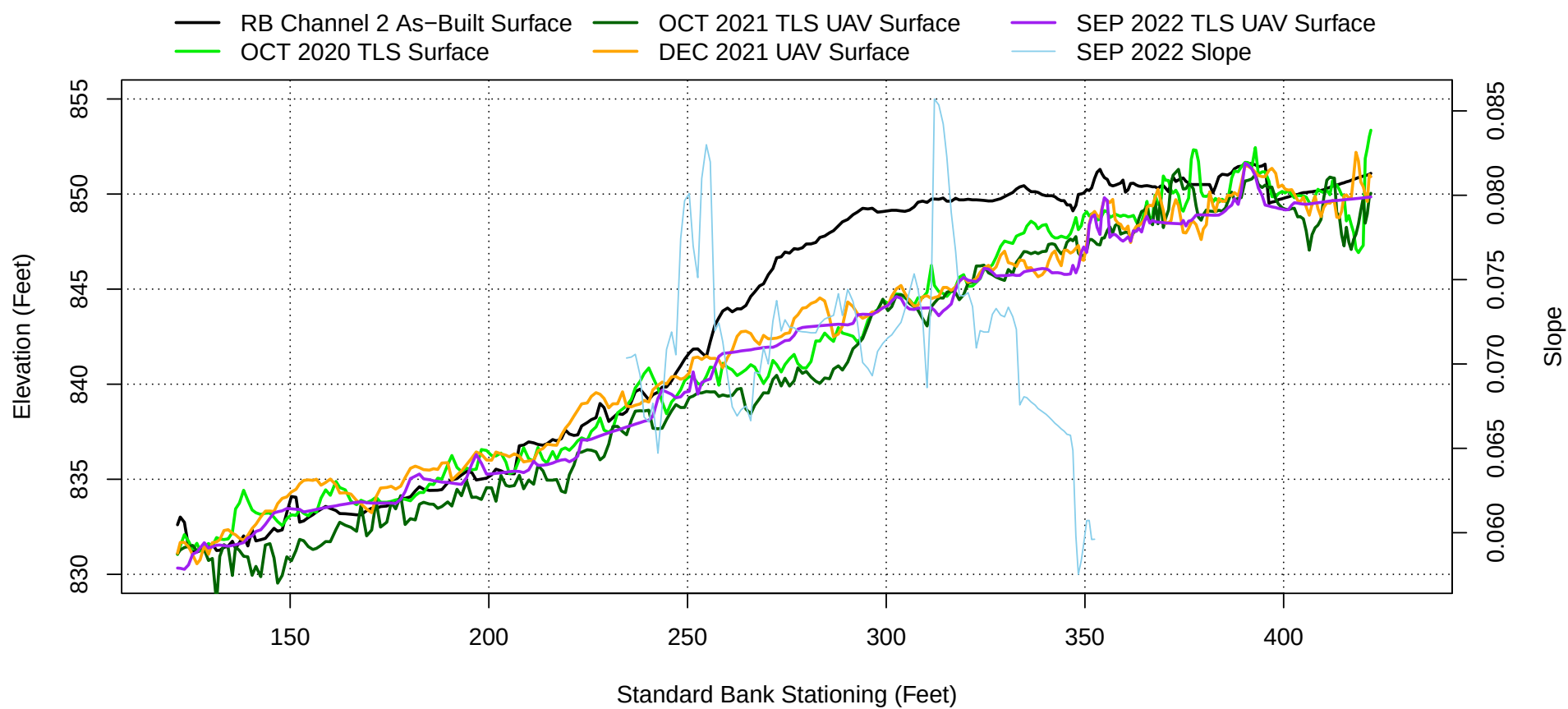
The following longitudinal profile plots include topographic data of the potential fish passage flow routes outlined in the Site Overview Map (Figure 2.1). Profile lines were extracted from the compiled as-built surface, the December 2020 UAV digital surface model, the modeled water surface elevations (WSE) at 170 cfs (the flows estimated at the time of the as-built survey), and the 200-ft slopes of the Dec 2020 terrain.

Modeled As-Built Conditions











Roadway near time lapse camera (“Small Bridge” on map)

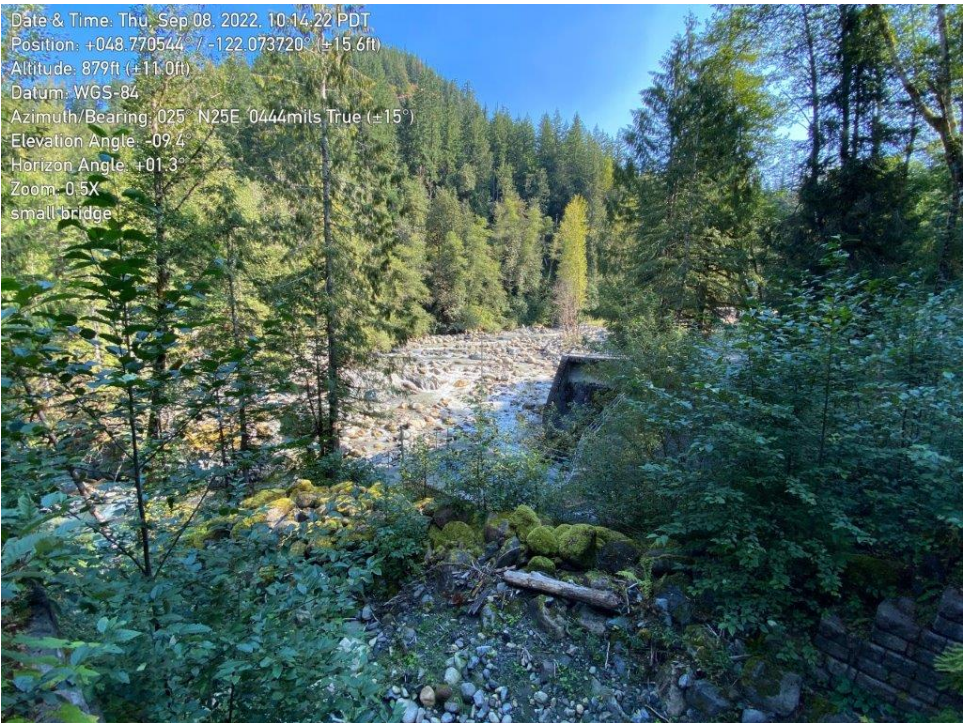
October 2020



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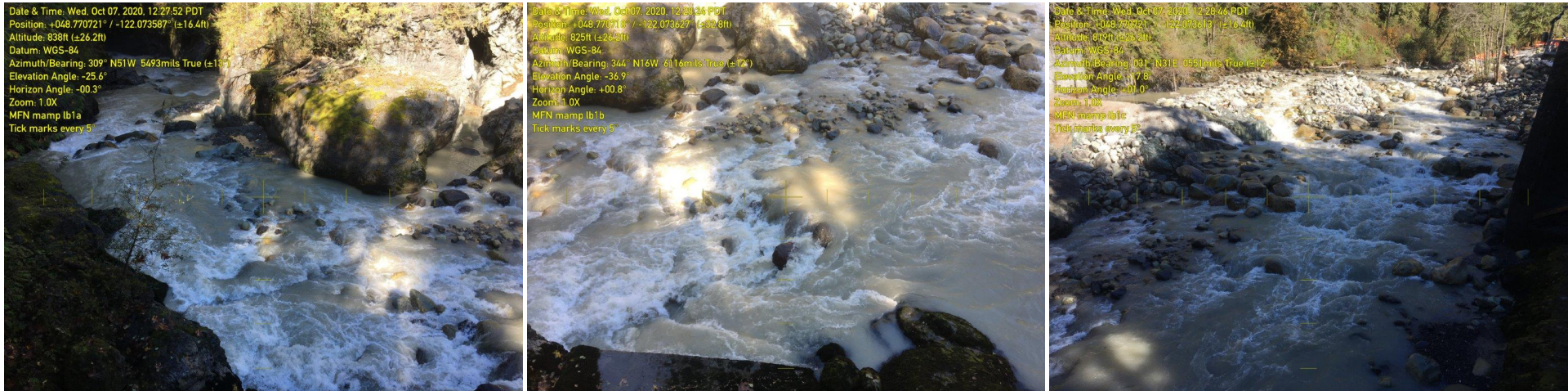


Photograph taken looking upstream from the roadway at the approximate timelapse camera location



Left Bank Location 1 (LB1)

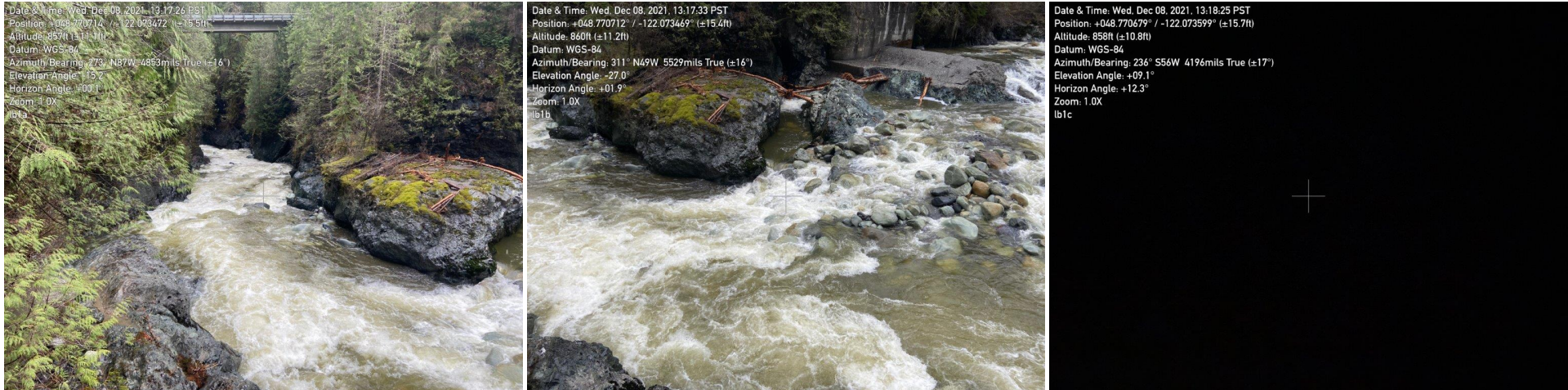
October 2020



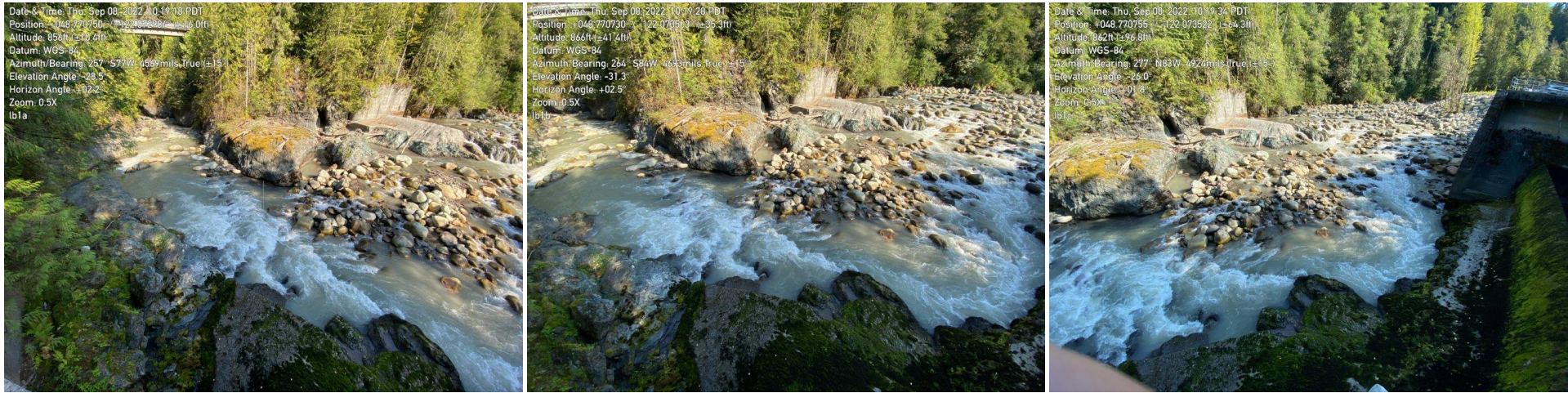
September 2021



December 2021



September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the photograph location marker



Left Bank Location 2 (LB2)

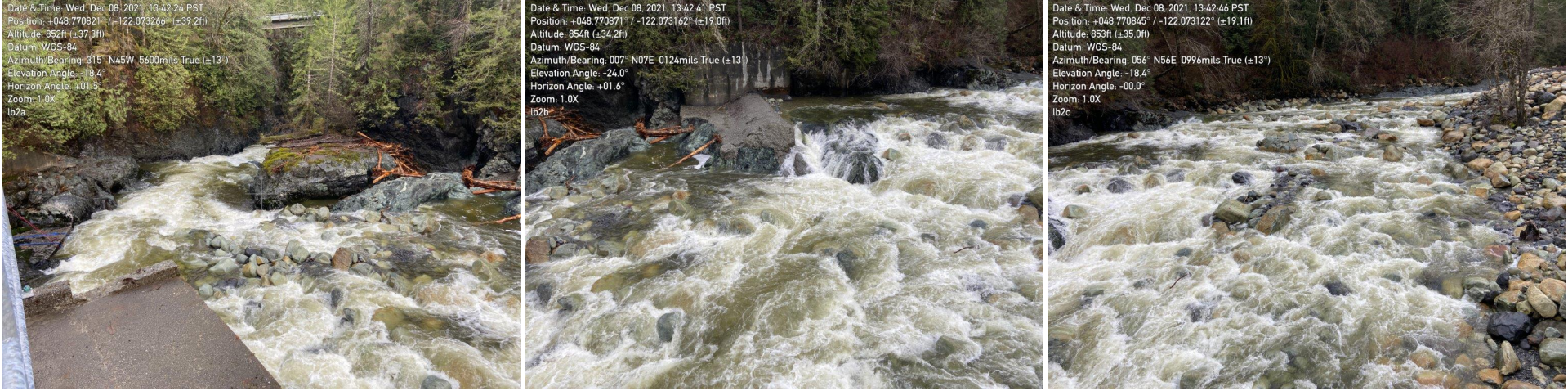
October 2020



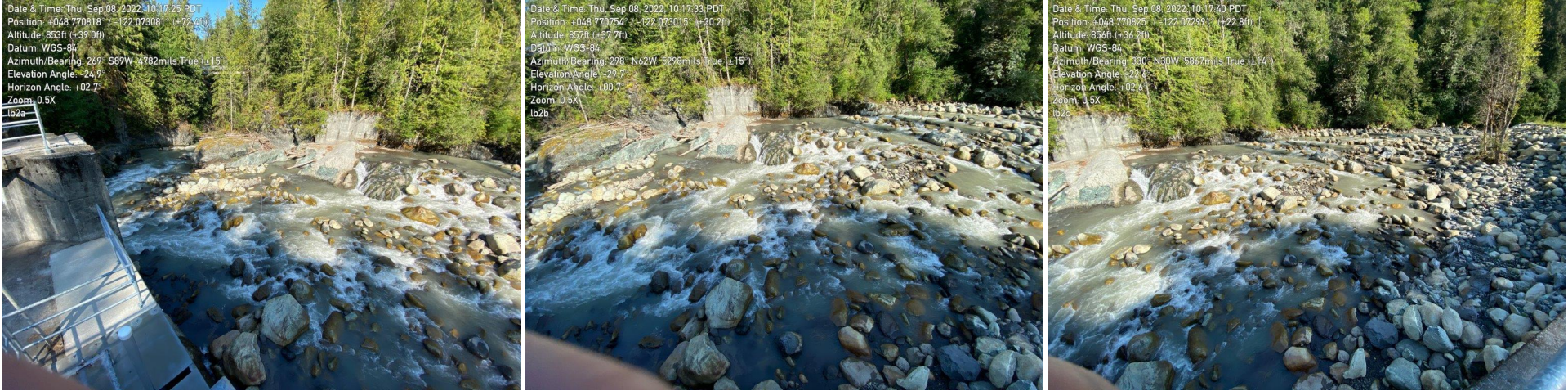
September 2021



December 2021



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Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the photograph location marker



Bridge Upstream Location (Bridge US)

October 2020



September 2022



Photographs taken from the bridge center railing looking at the upstream horizon (left), upstream oblique (center) and directly below bridge (right)



Bridge Downstream Location (Bridge DS)

October 2020



Photographs taken from the bridge center railing looking at the downstream horizon (left), downstream oblique (center) and directly below bridge (right)



Overview from Road

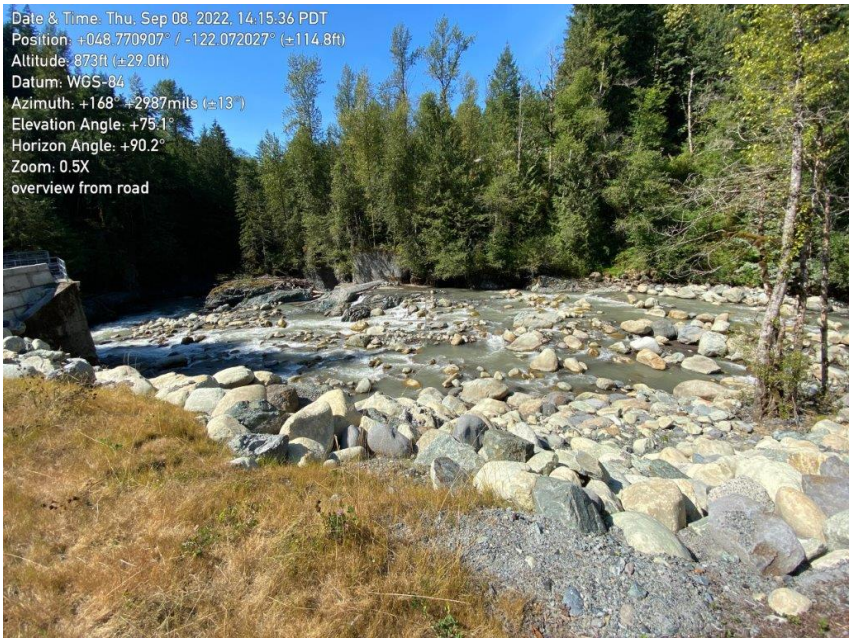
October 2020



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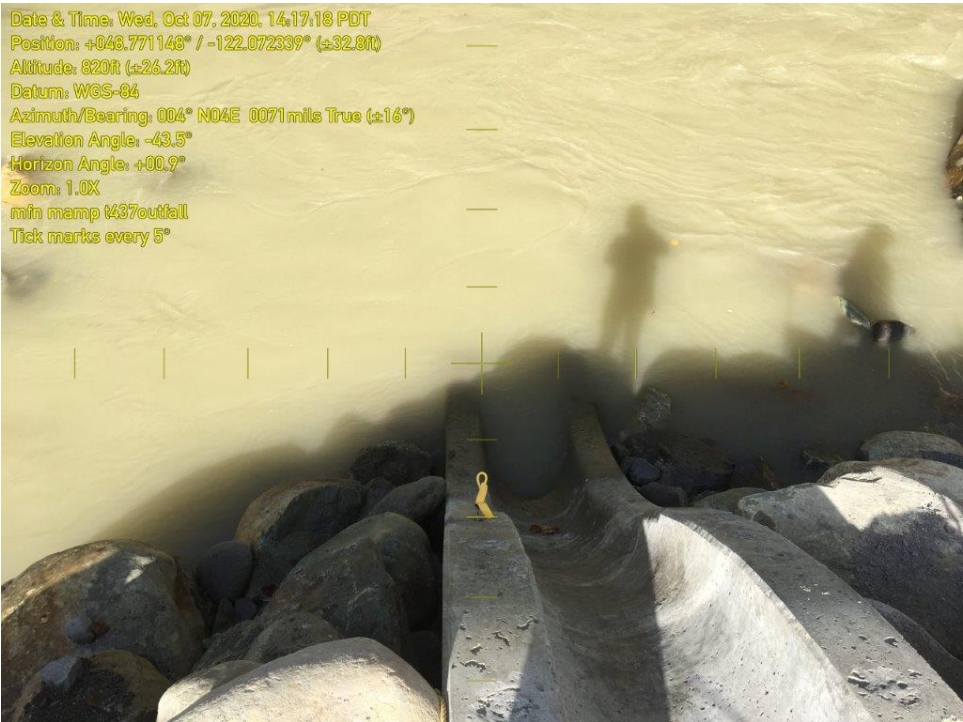


Photographs taken looking downstream from construction roadway



Fishway Outfall Slide (Transect 437 on map)

October 2020



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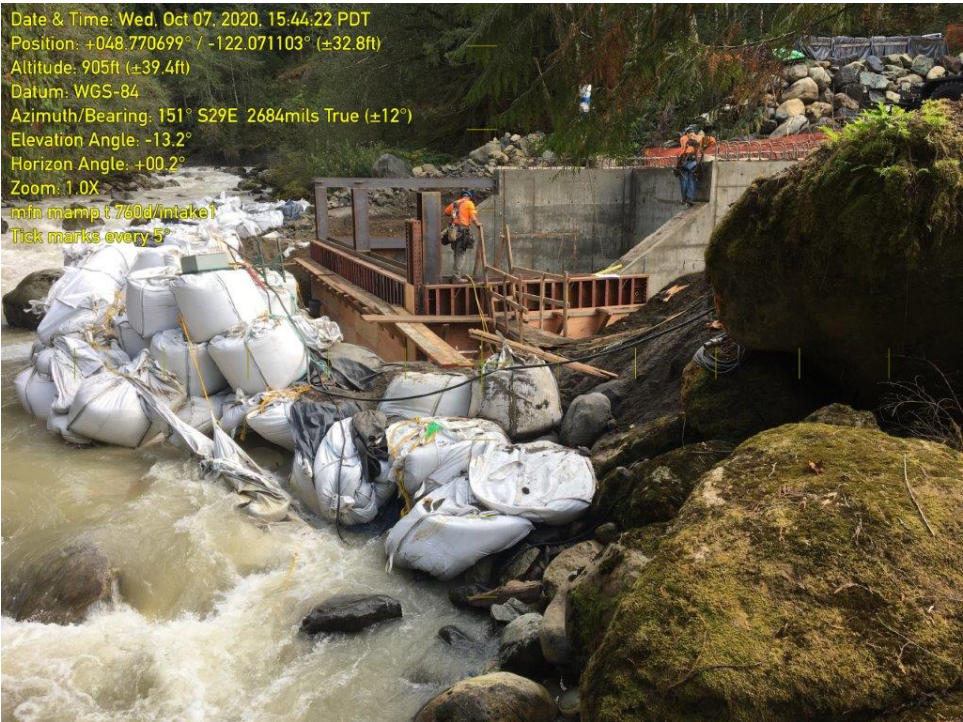


Photograph taken looking down at fishway outfall slide from Transect 437 marker

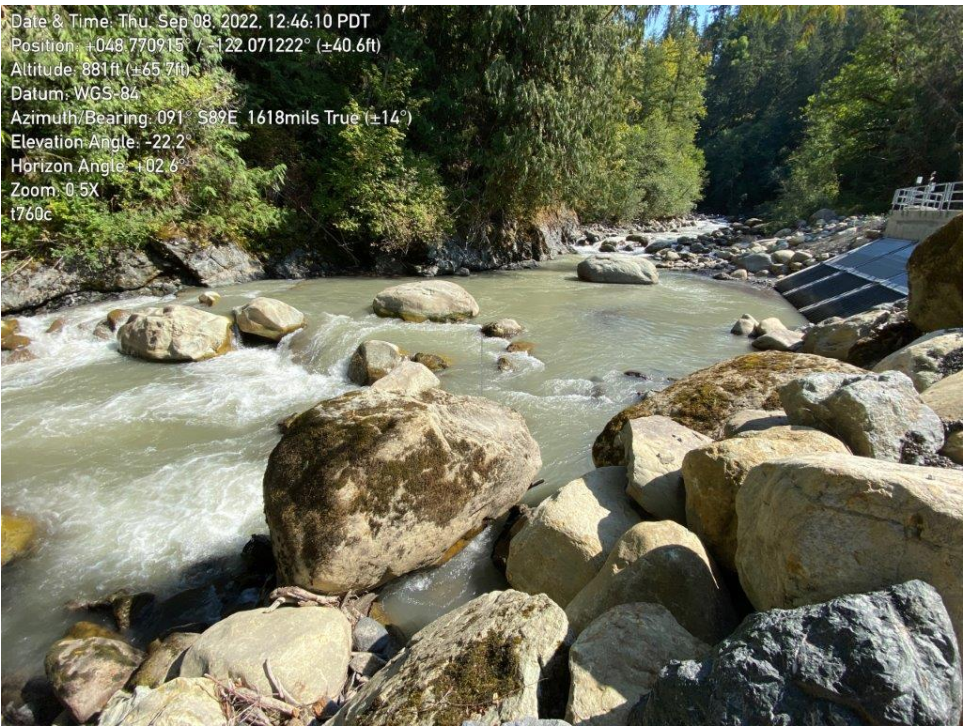


Intake 1 (Transect 760 on map)

October 2020



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Photograph taken looking upstream from Transect 760 marker

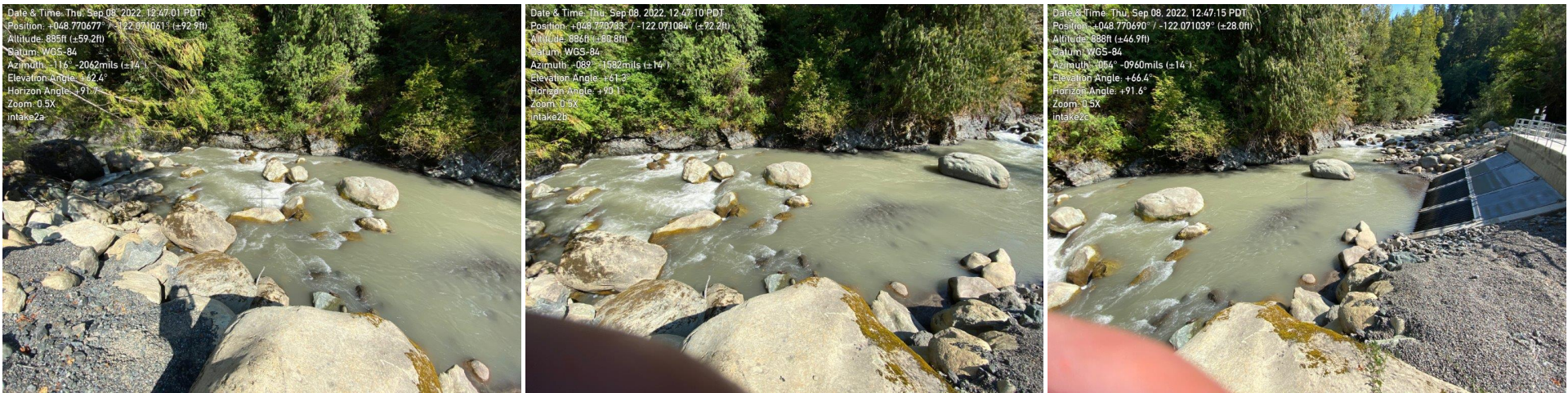


Intake 2

October 2020



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Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the photograph location marker

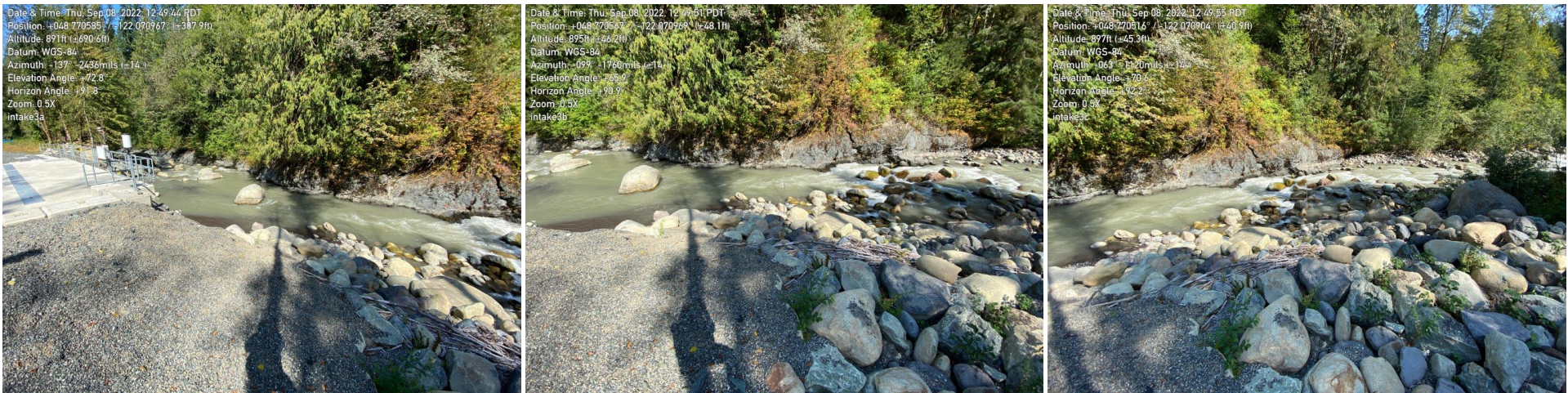


Intake 3

October 2020



September 2022

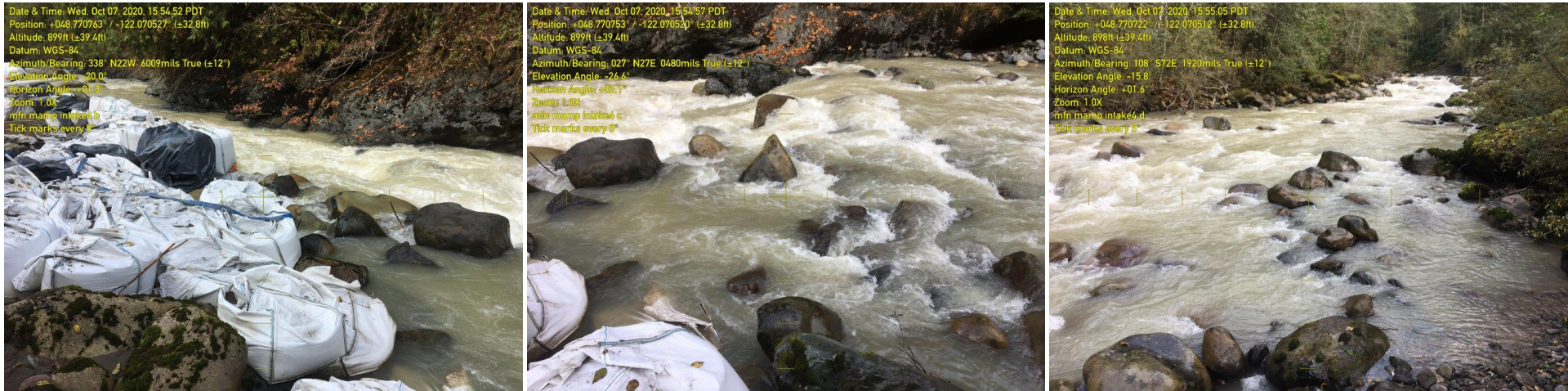


Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the photograph location marker



Intake 4

October 2020



September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the photograph location marker

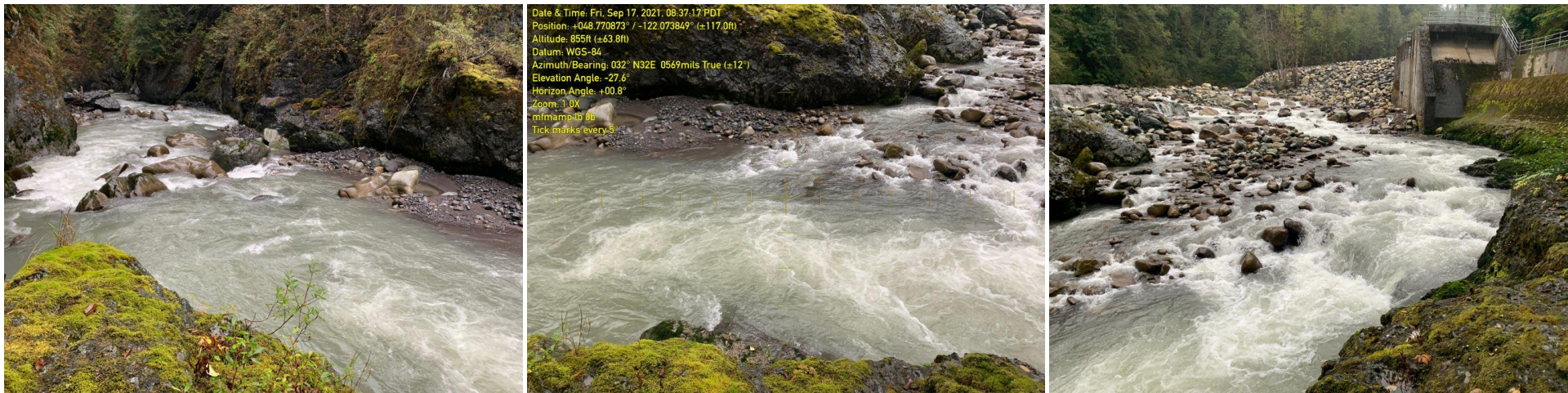


Transect 0

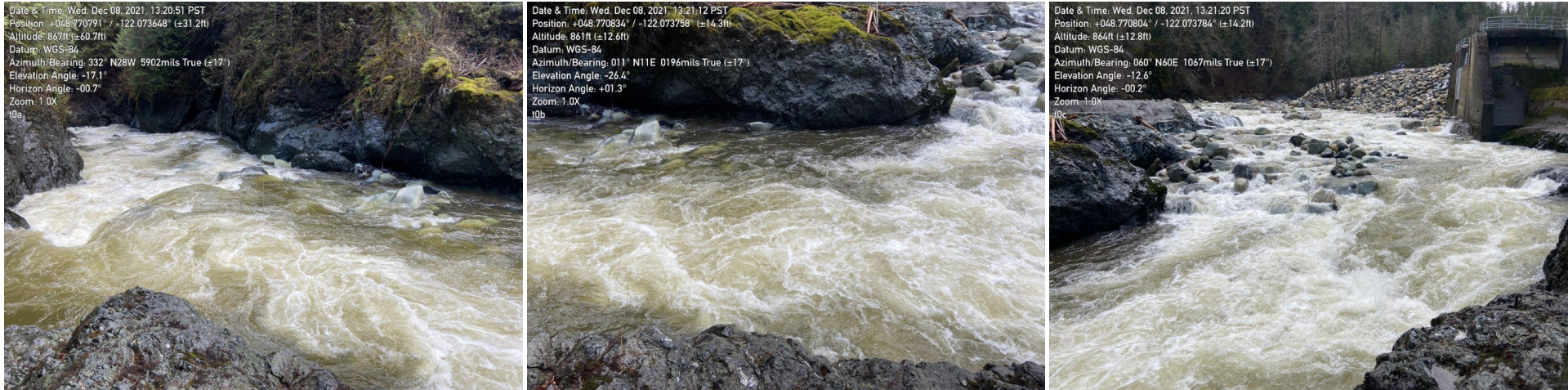
October 2020



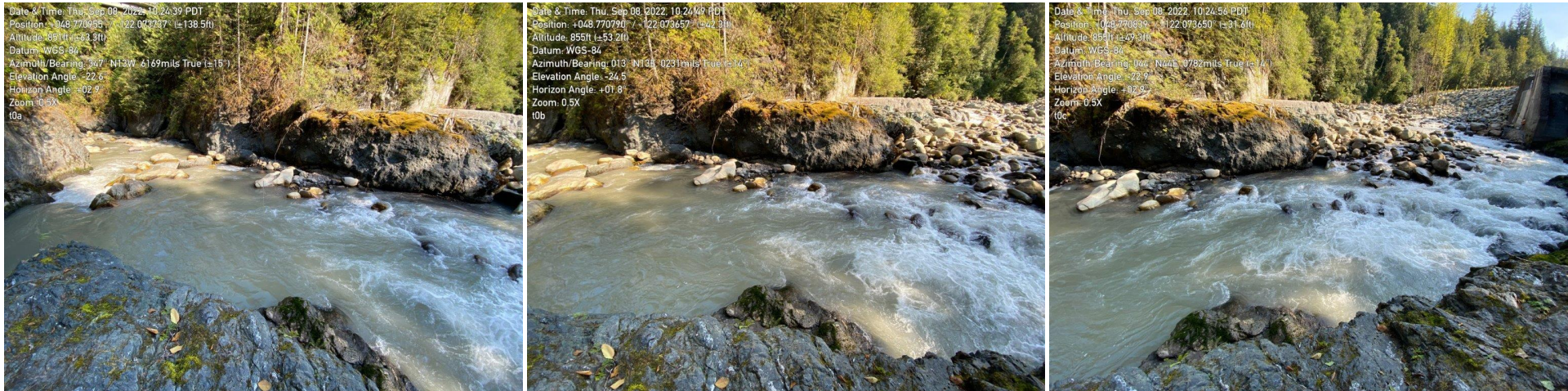
September 2021



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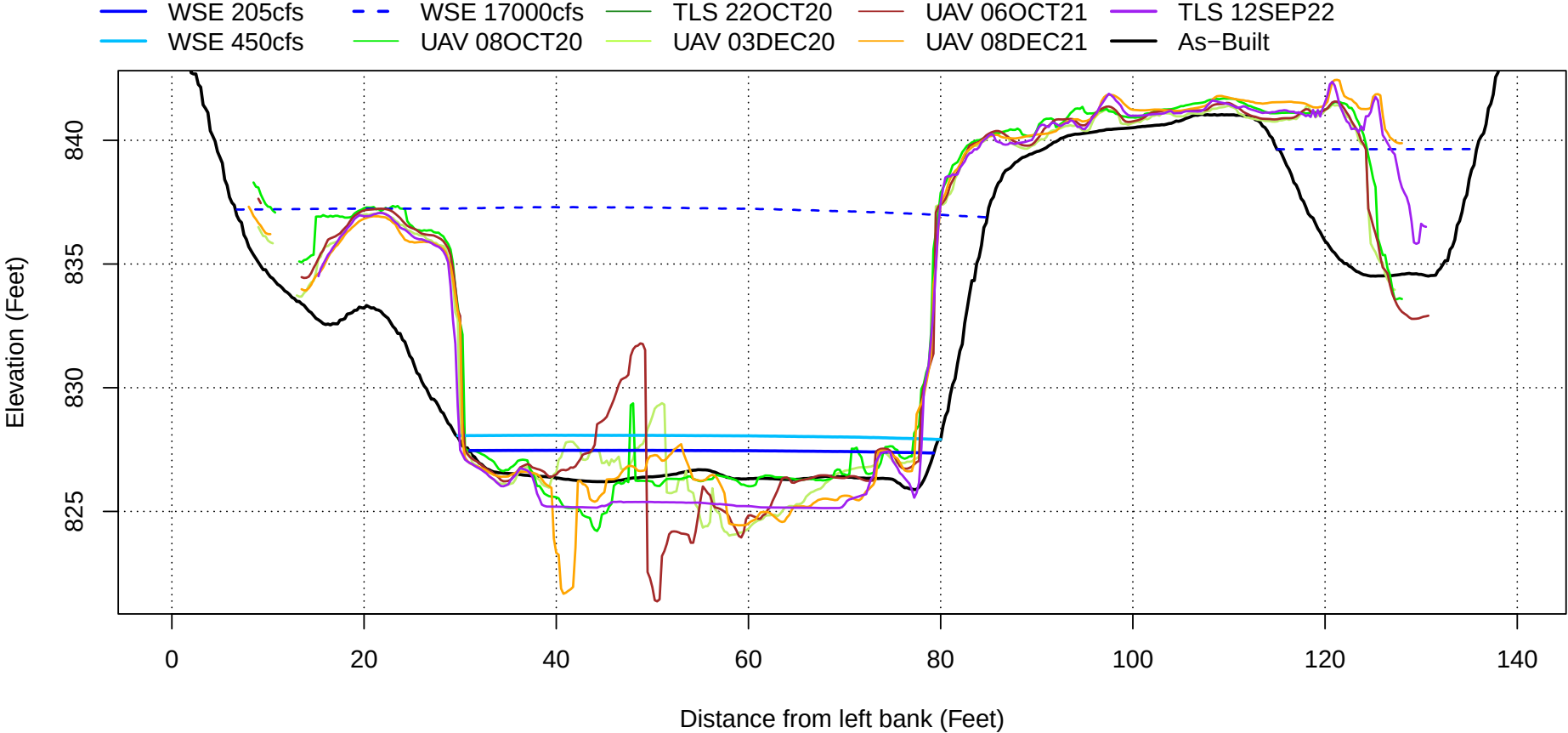


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Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker





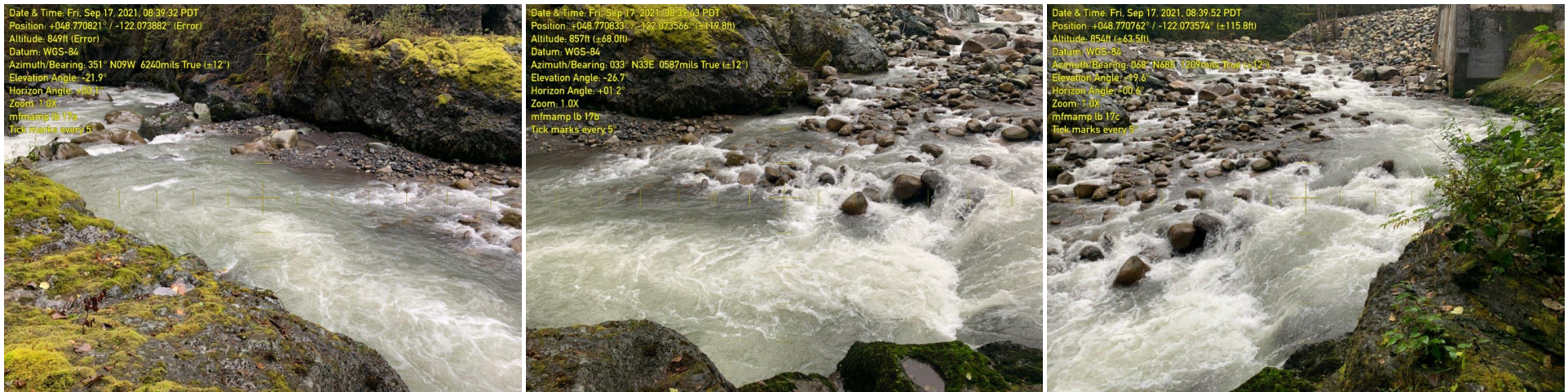


Transect 17

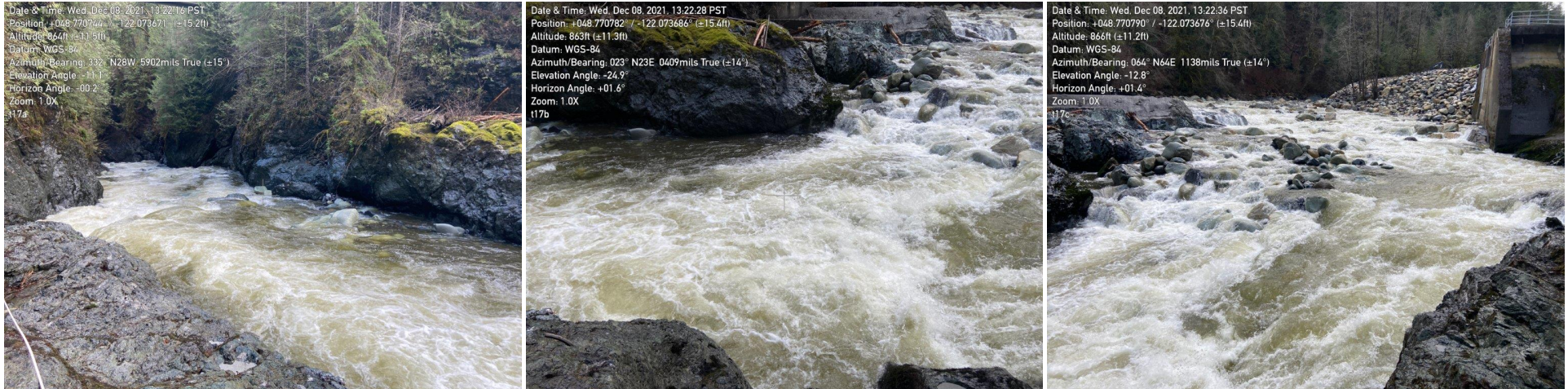
October 2020



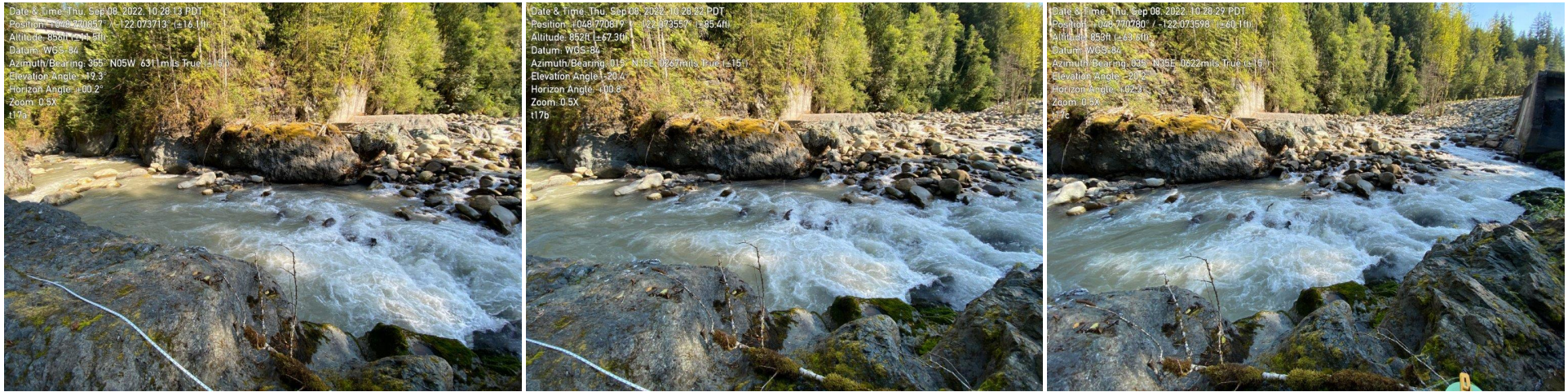
September 2021



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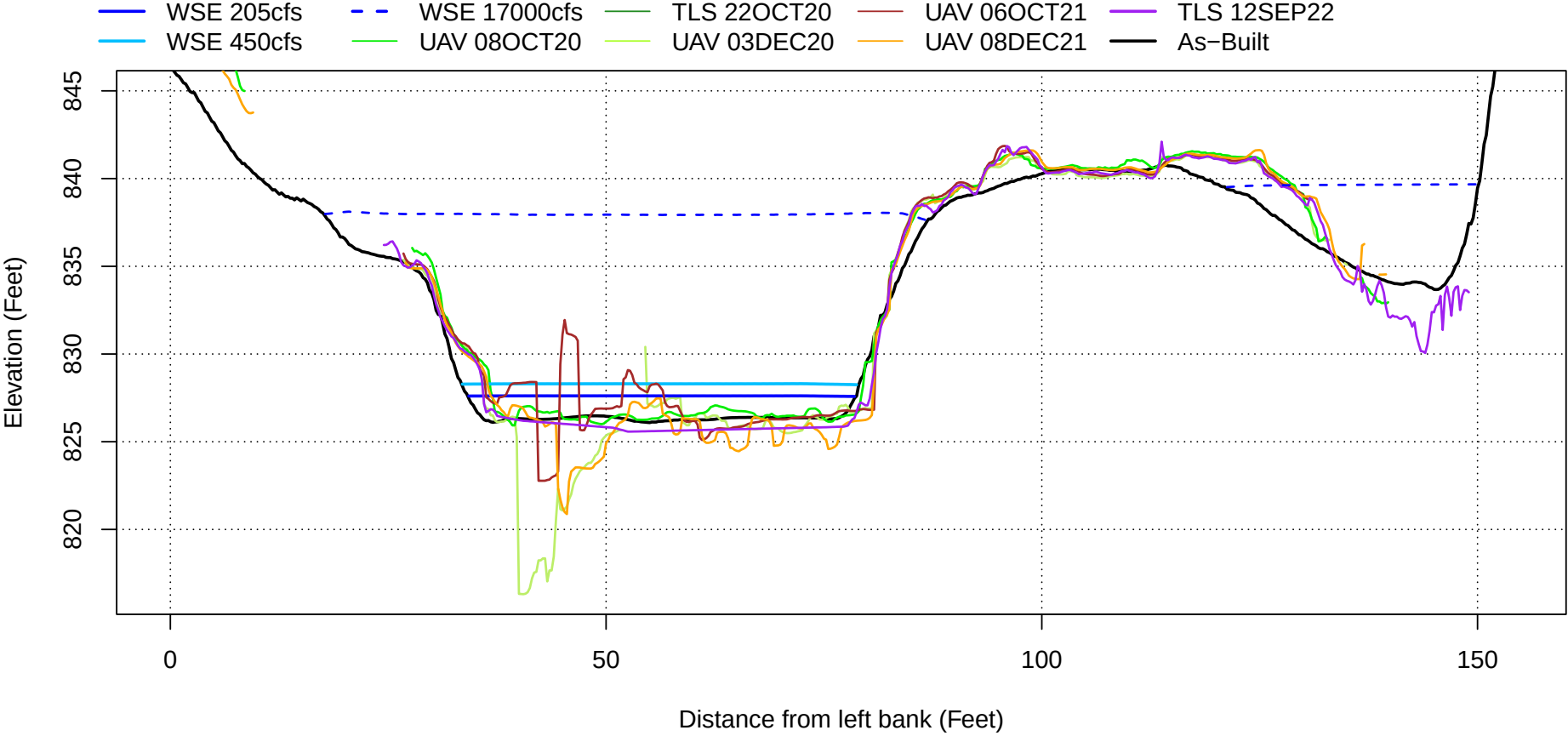


September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker

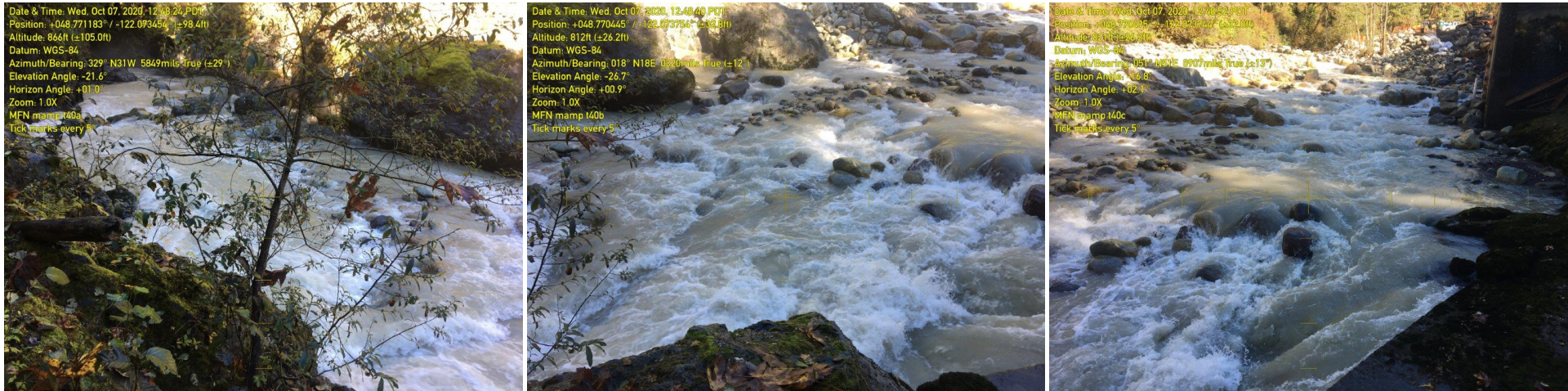






Transect 40

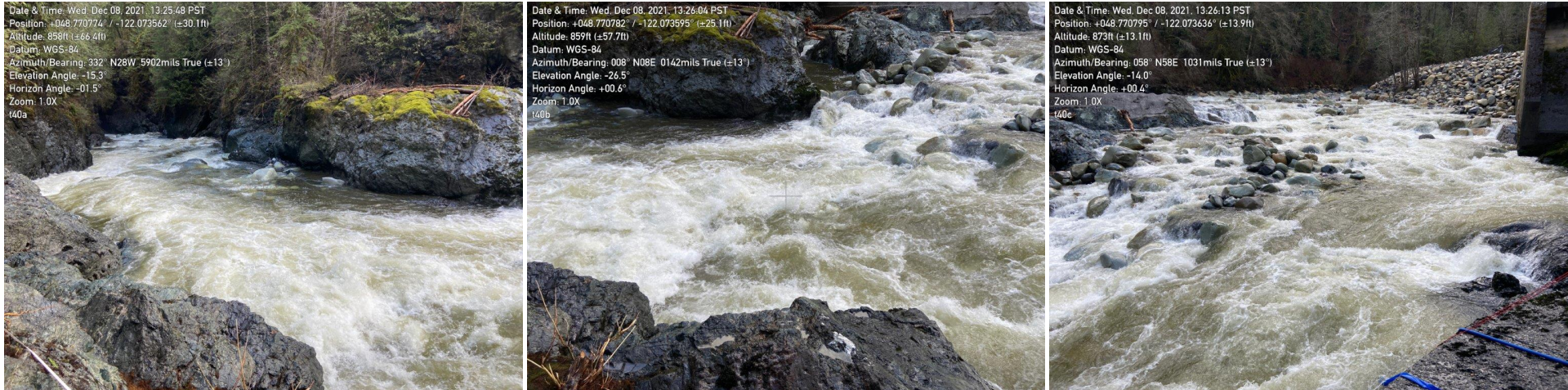
October 2020



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December 2021

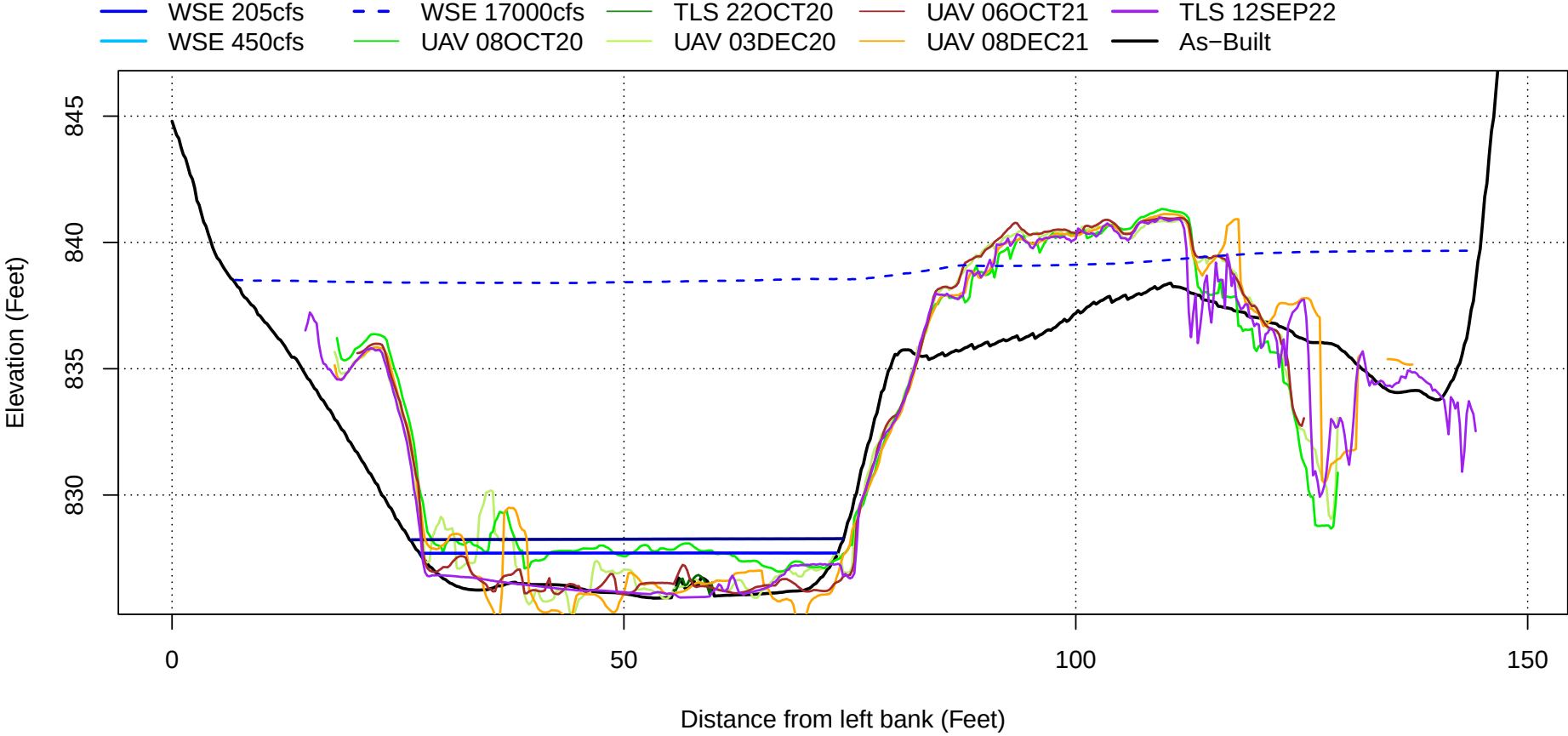


September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker

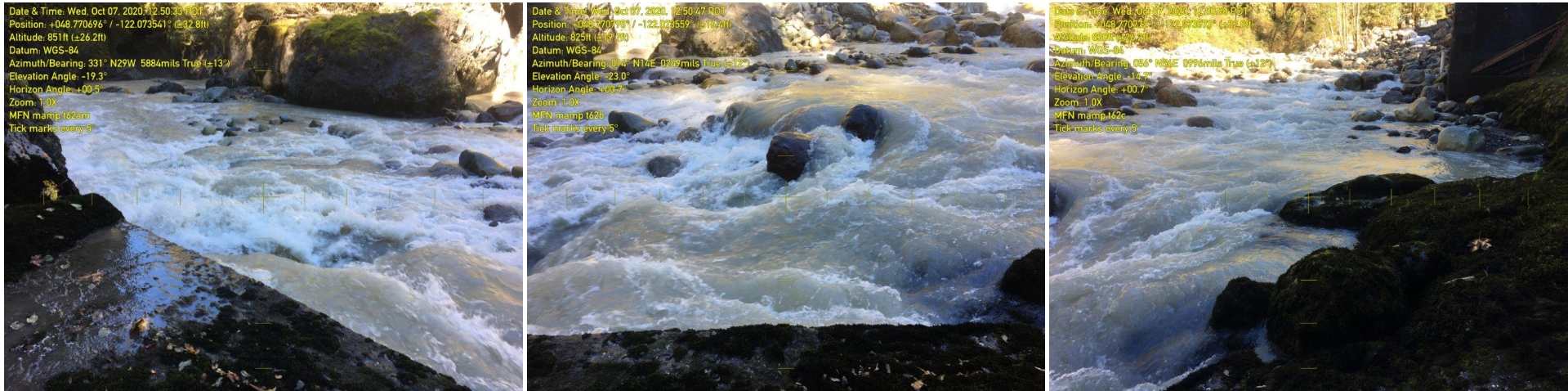






Transect 62

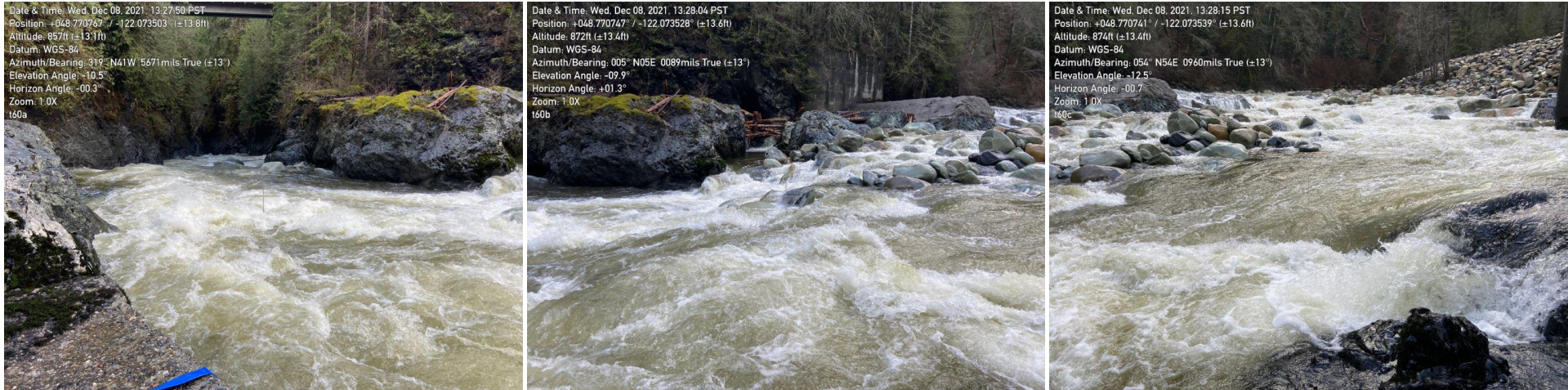
October 2020



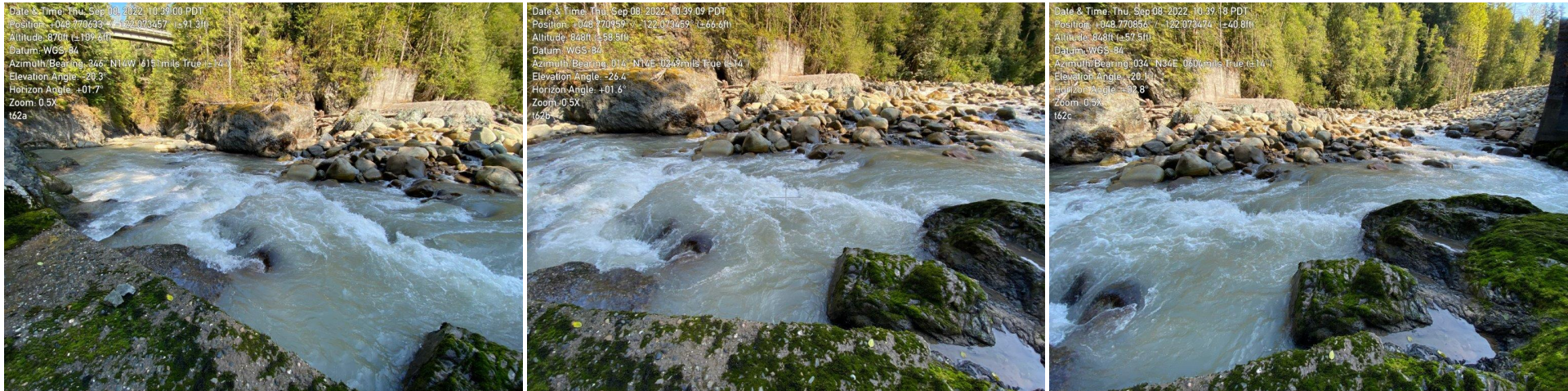
September 2021



December 2021

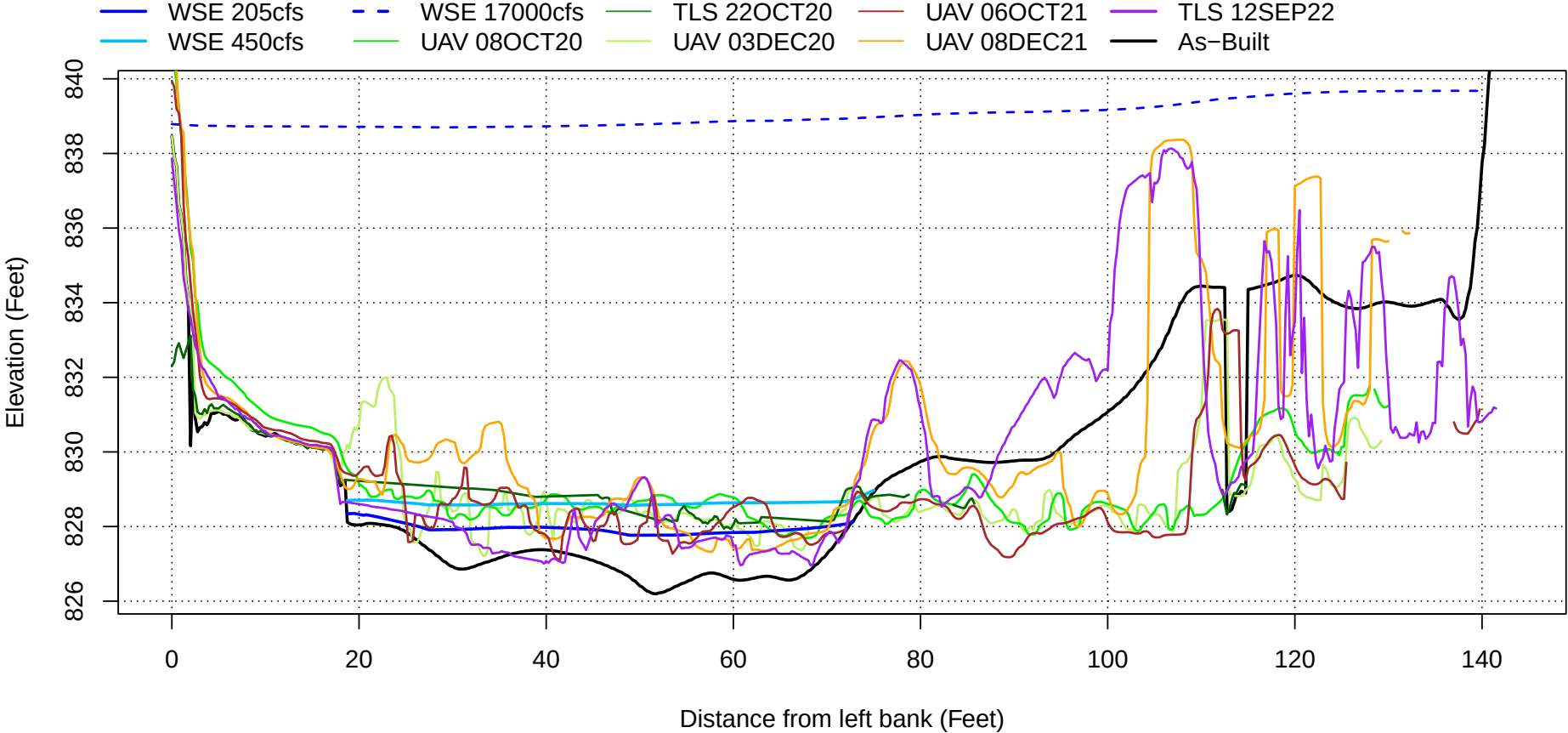


September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker

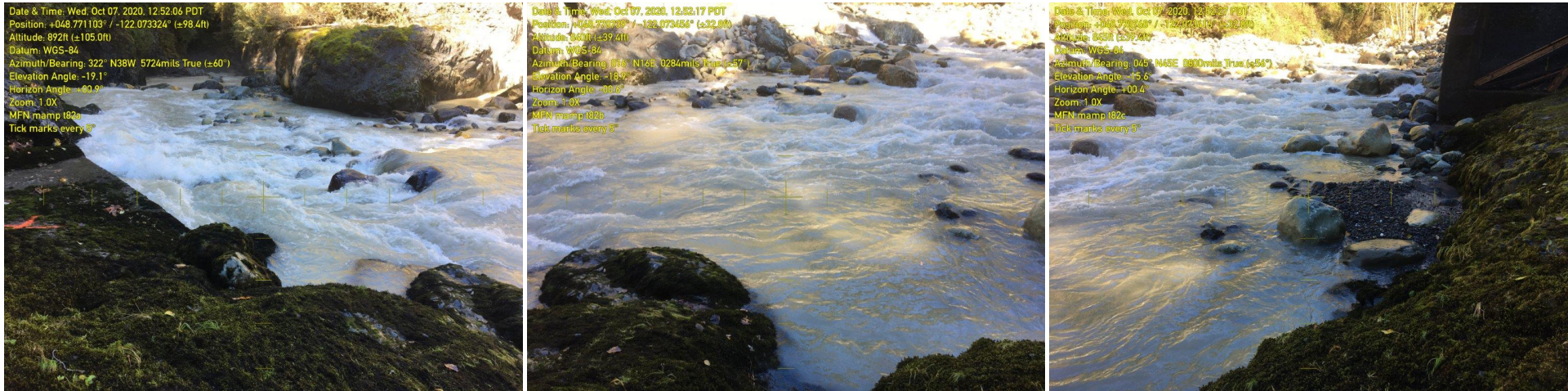




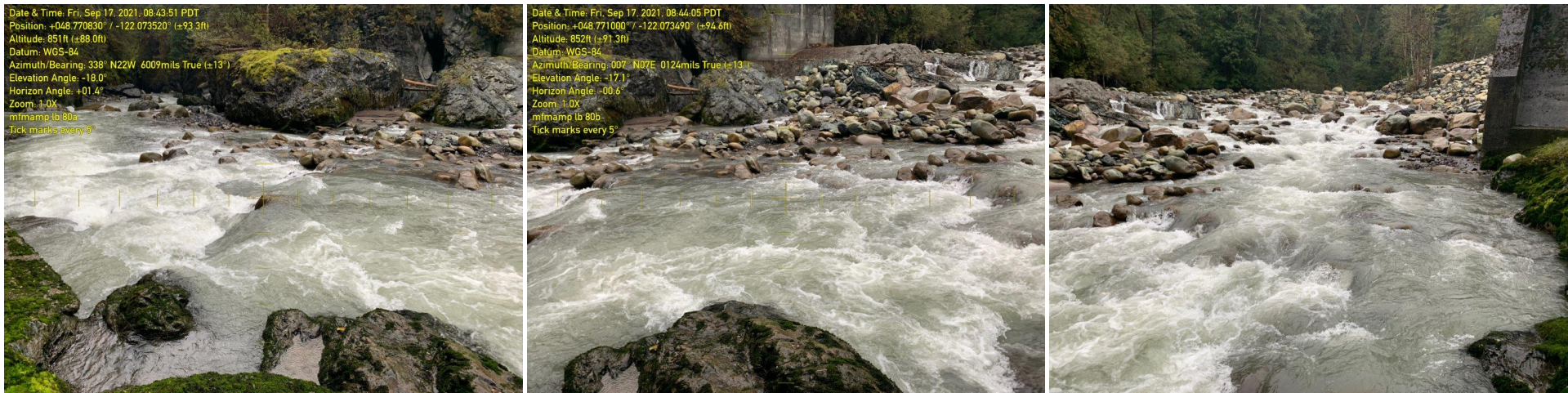


Transect 82

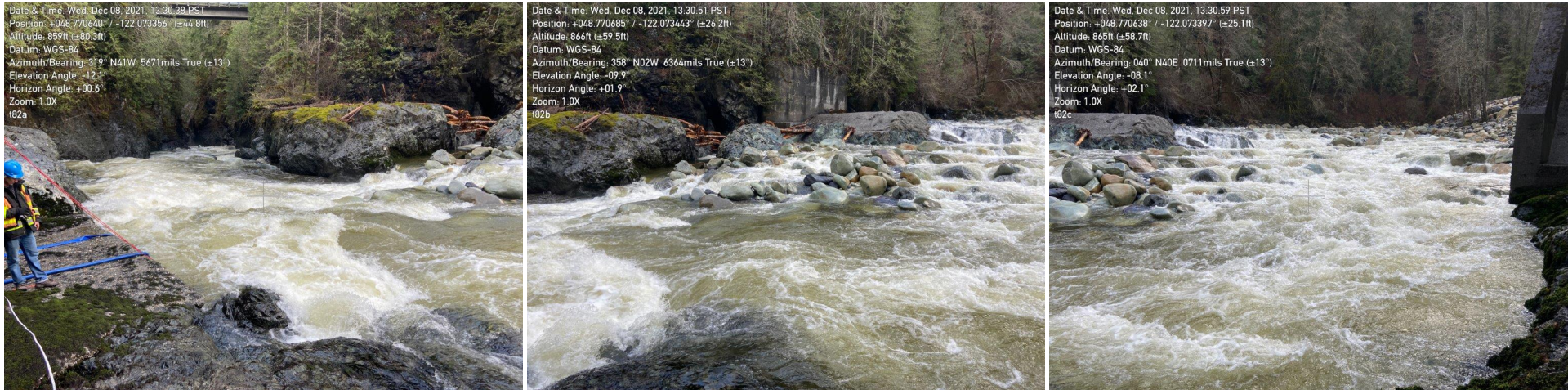
October 2020



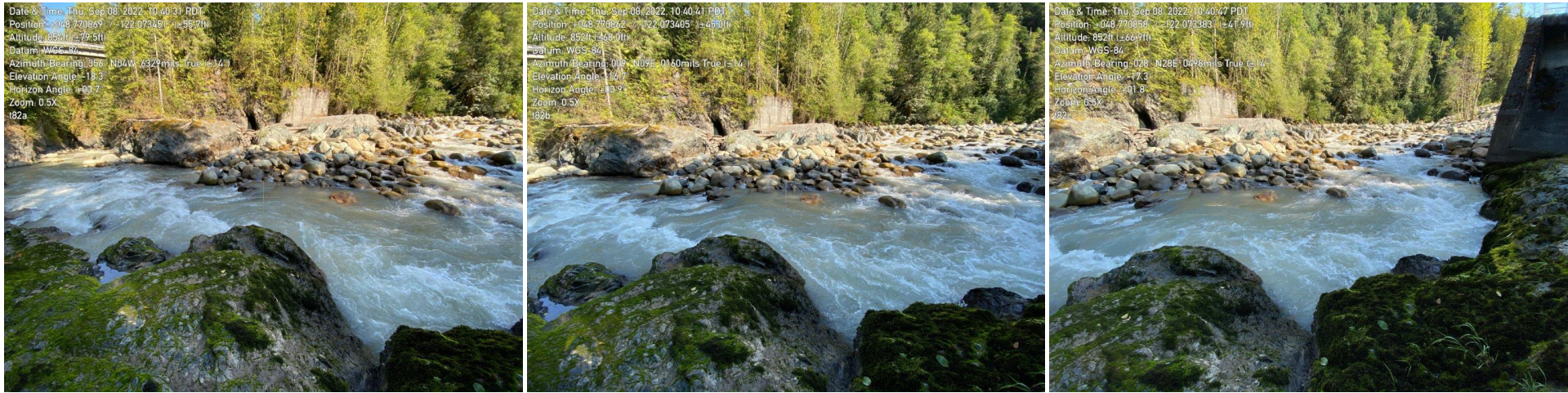
September 2021



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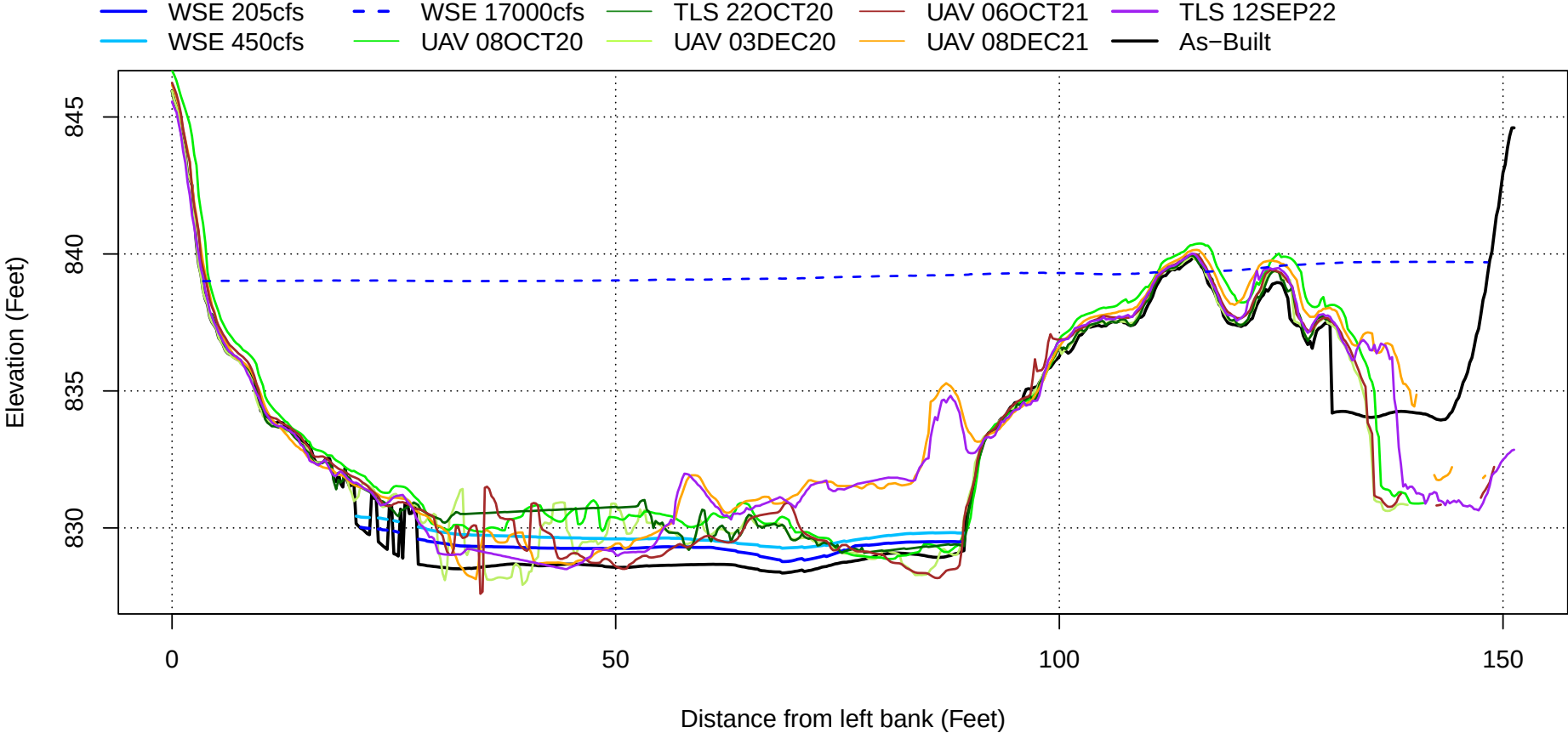


September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker

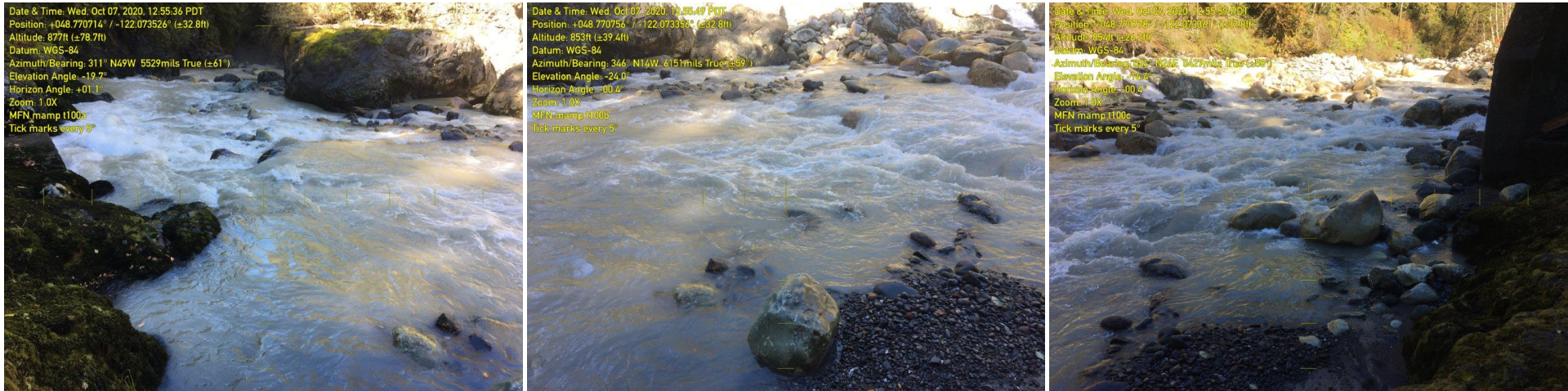






Transect 100

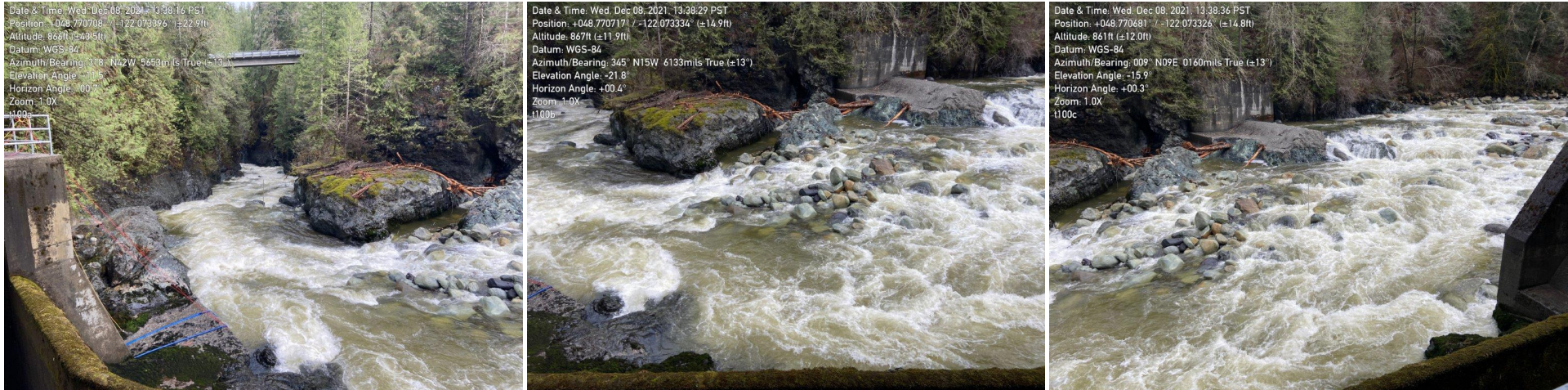
October 2020



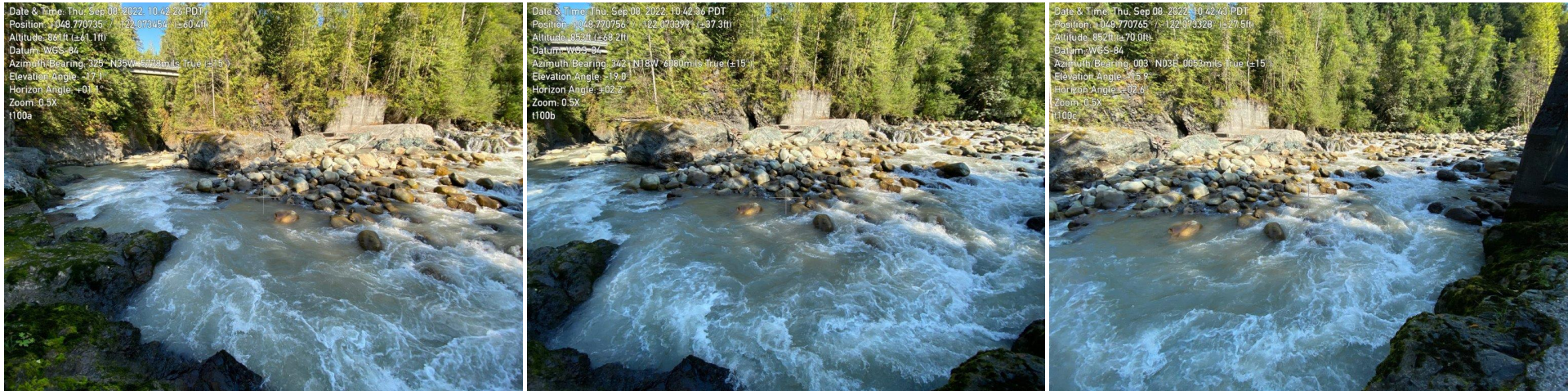
September 2021



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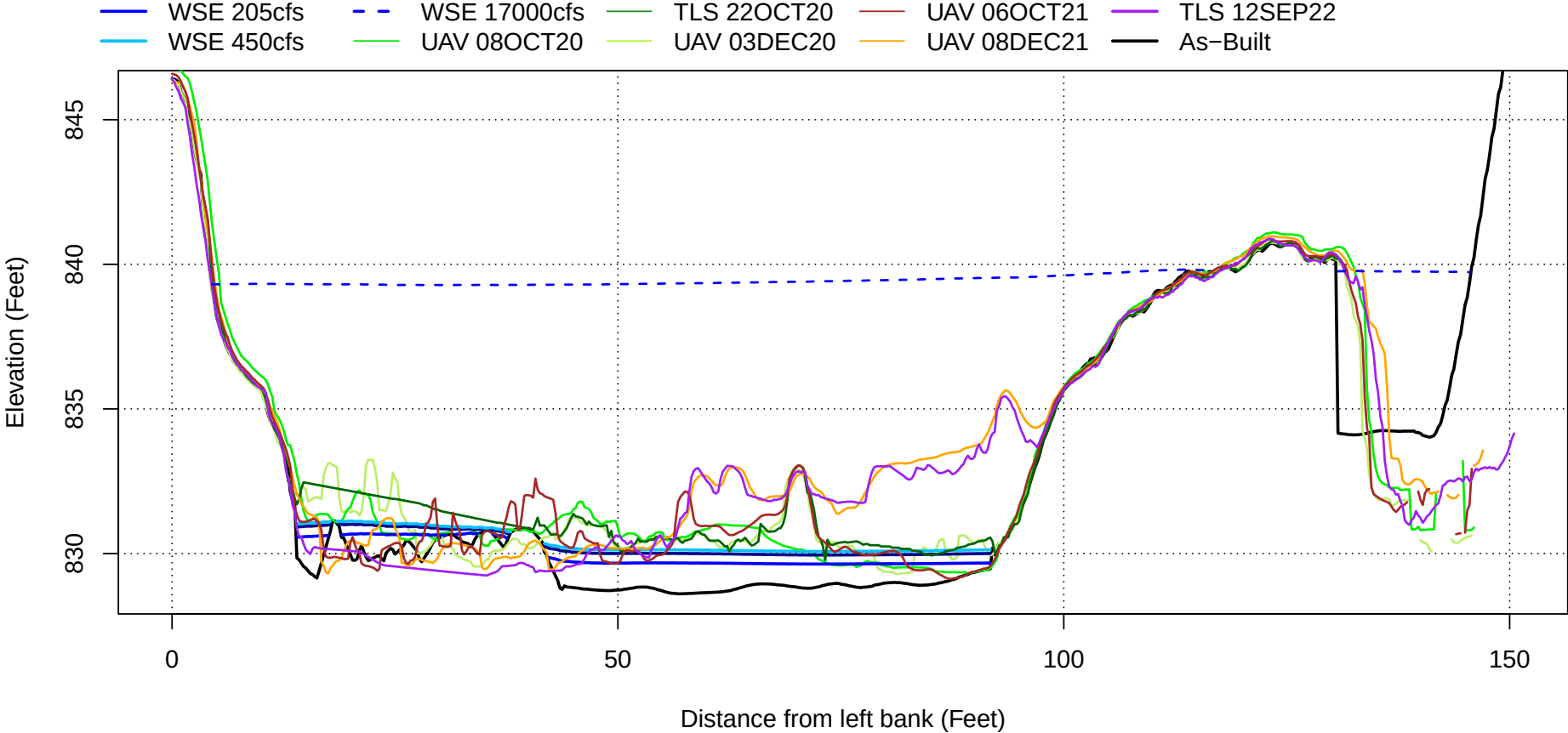


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Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker





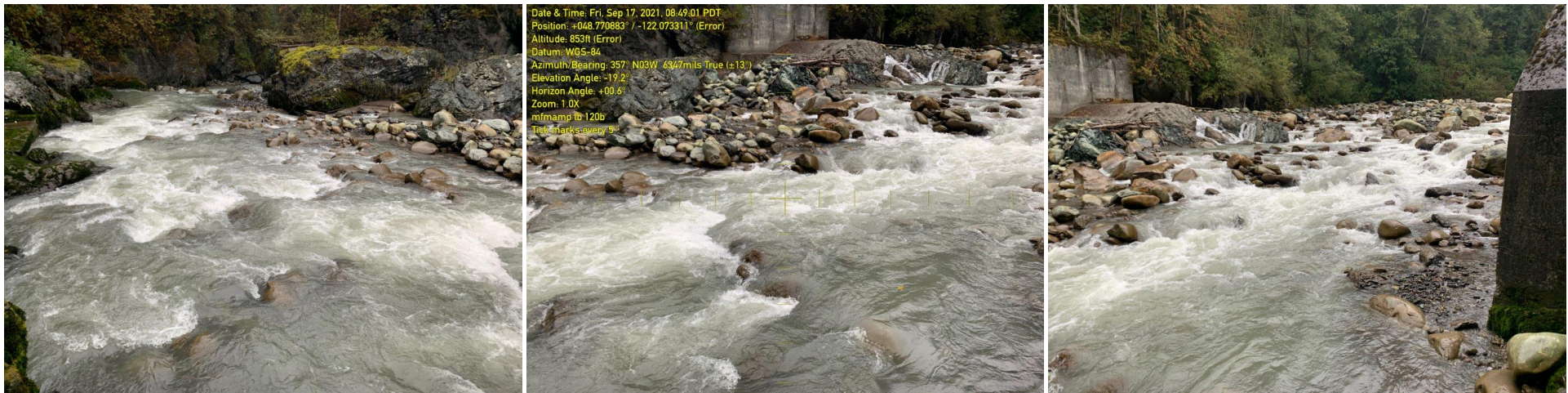


Transect 125

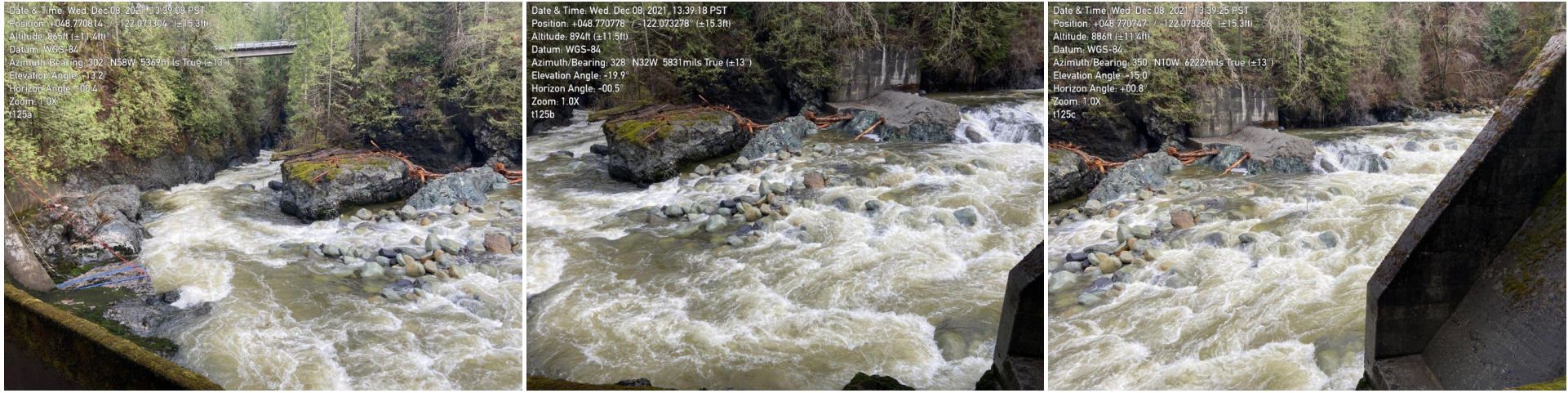
October 2020



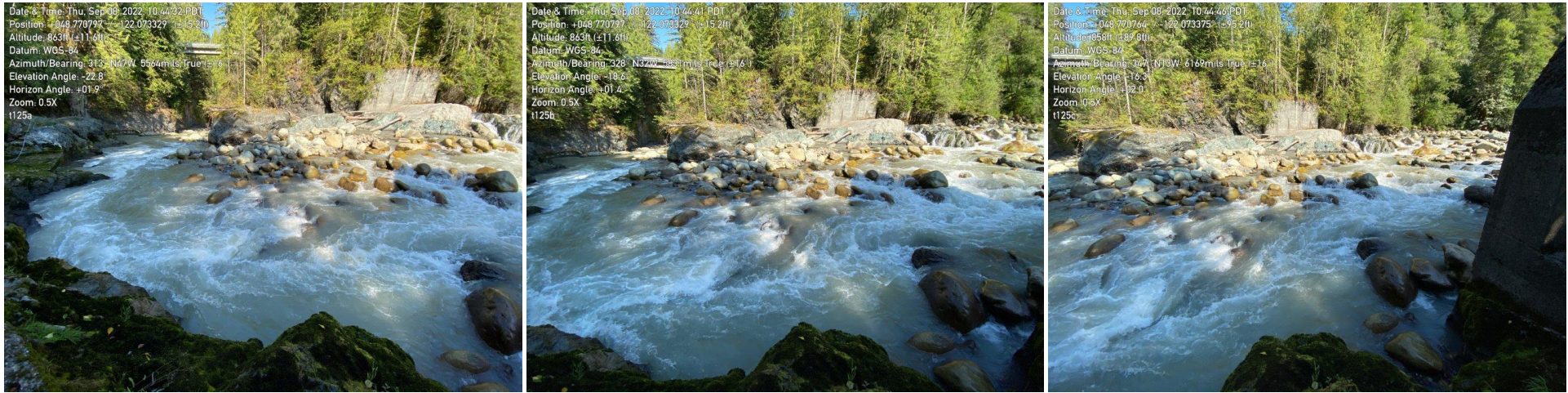
September 2021



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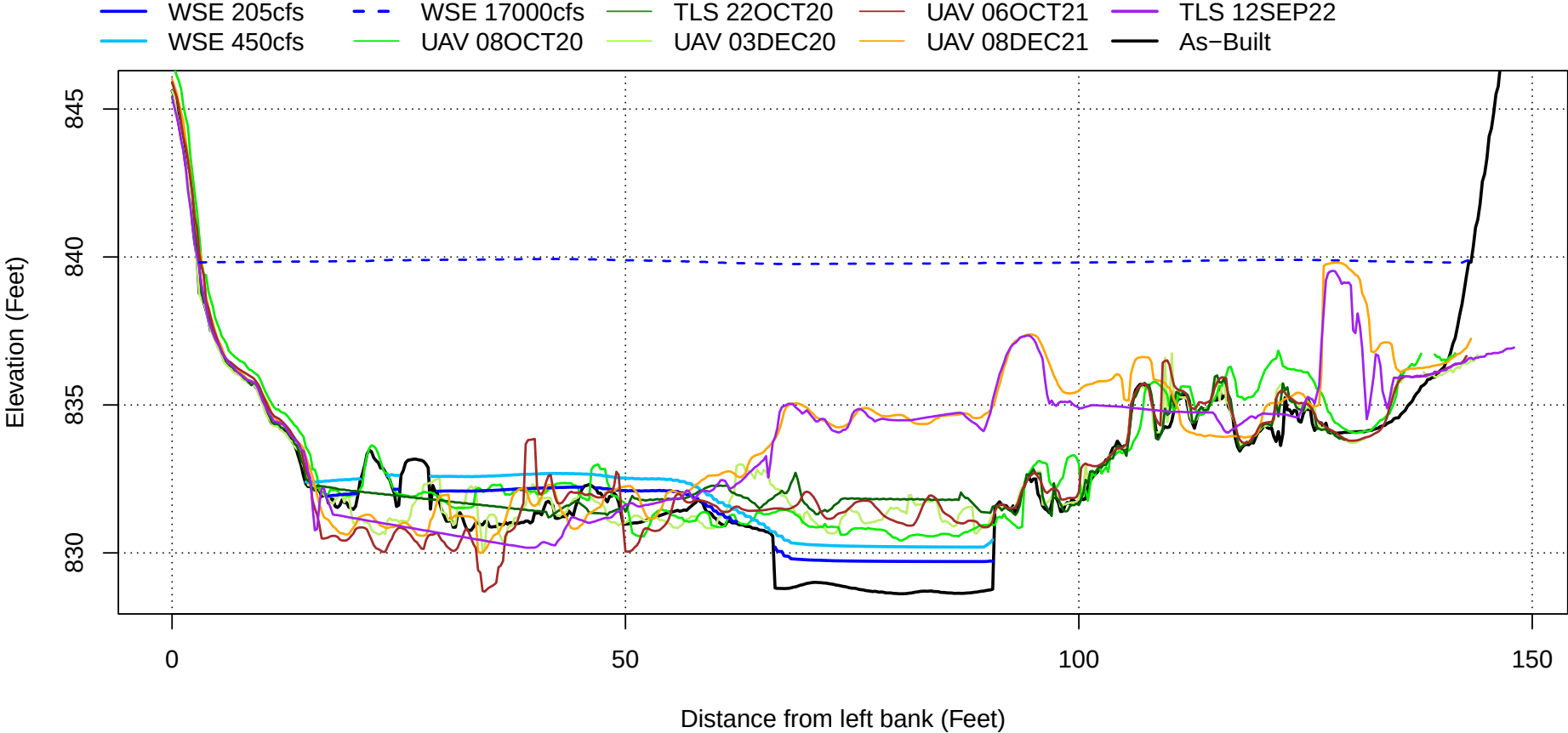


September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker

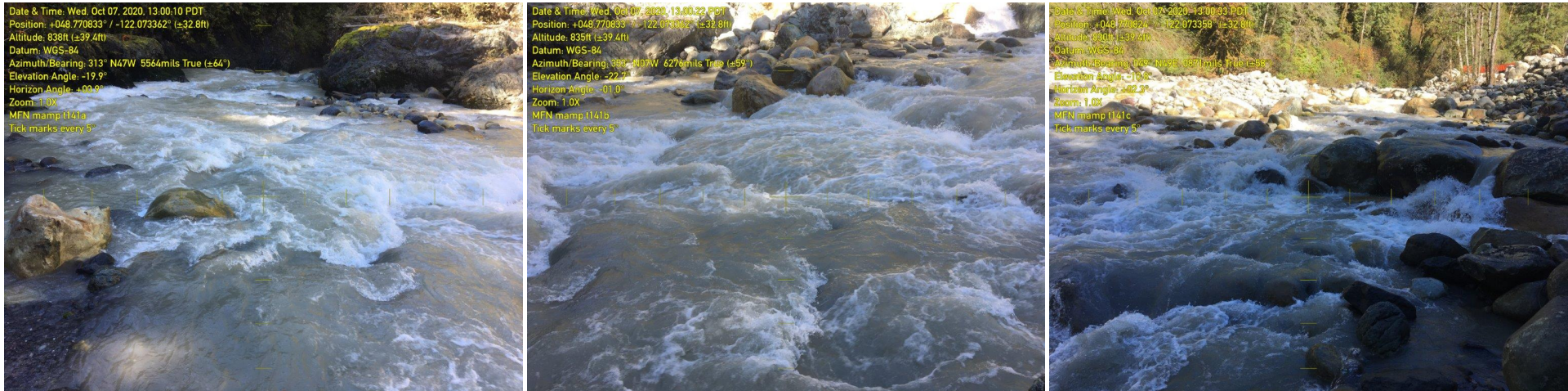






Transect 141

October 2020



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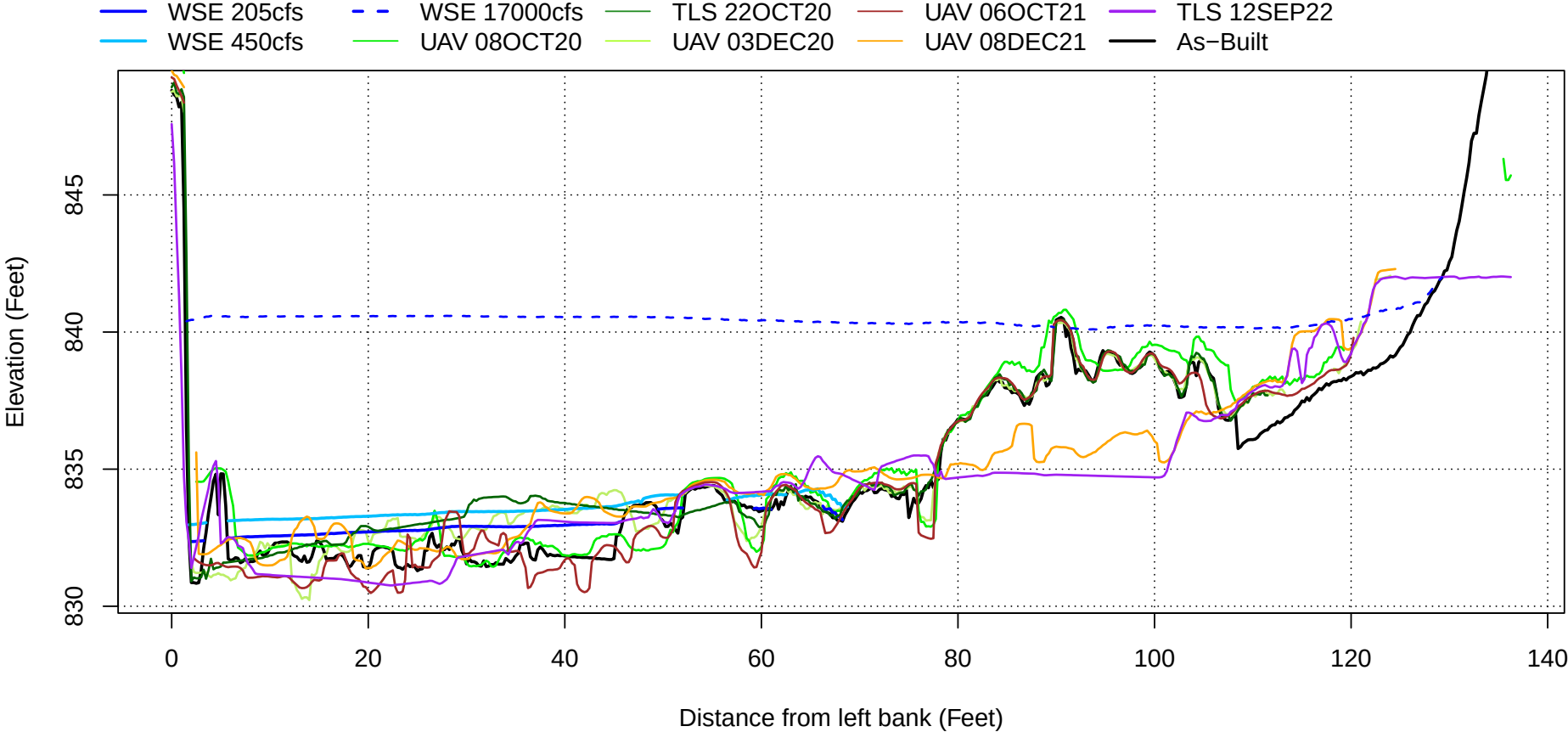


September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker







Transect 160

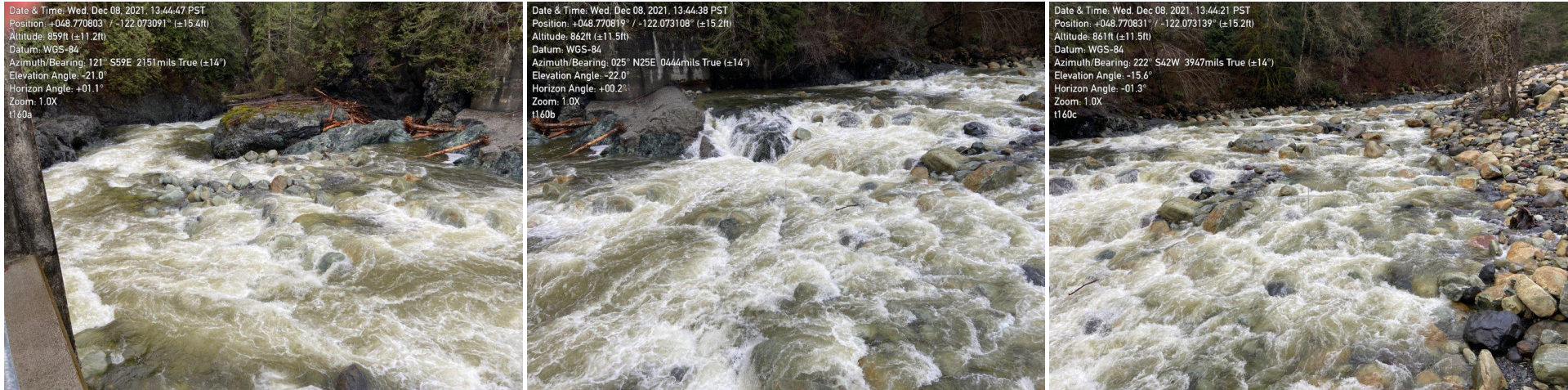
October 2020



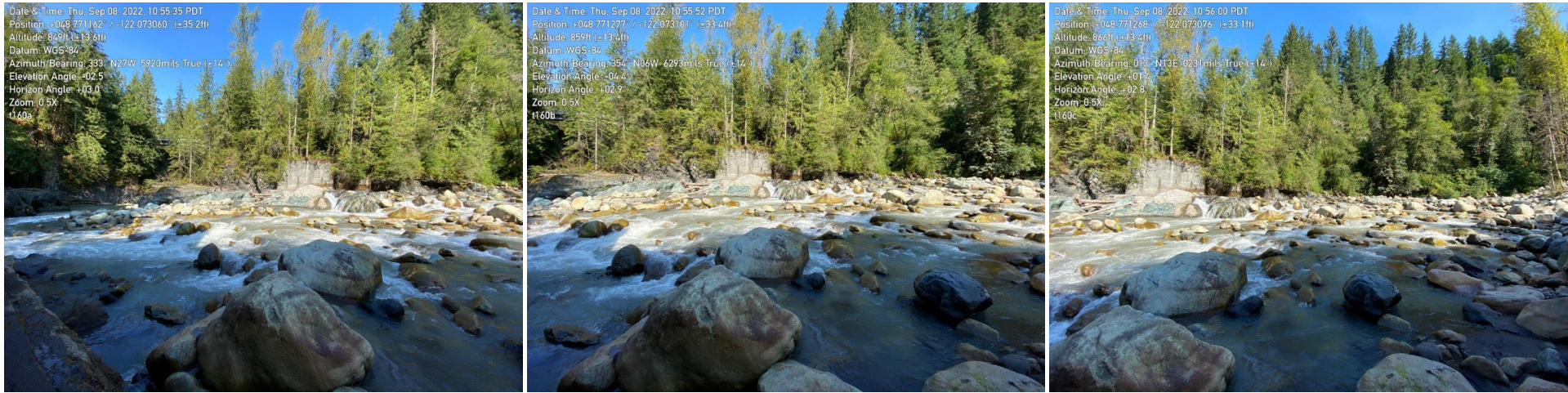
September 2021



December 2021

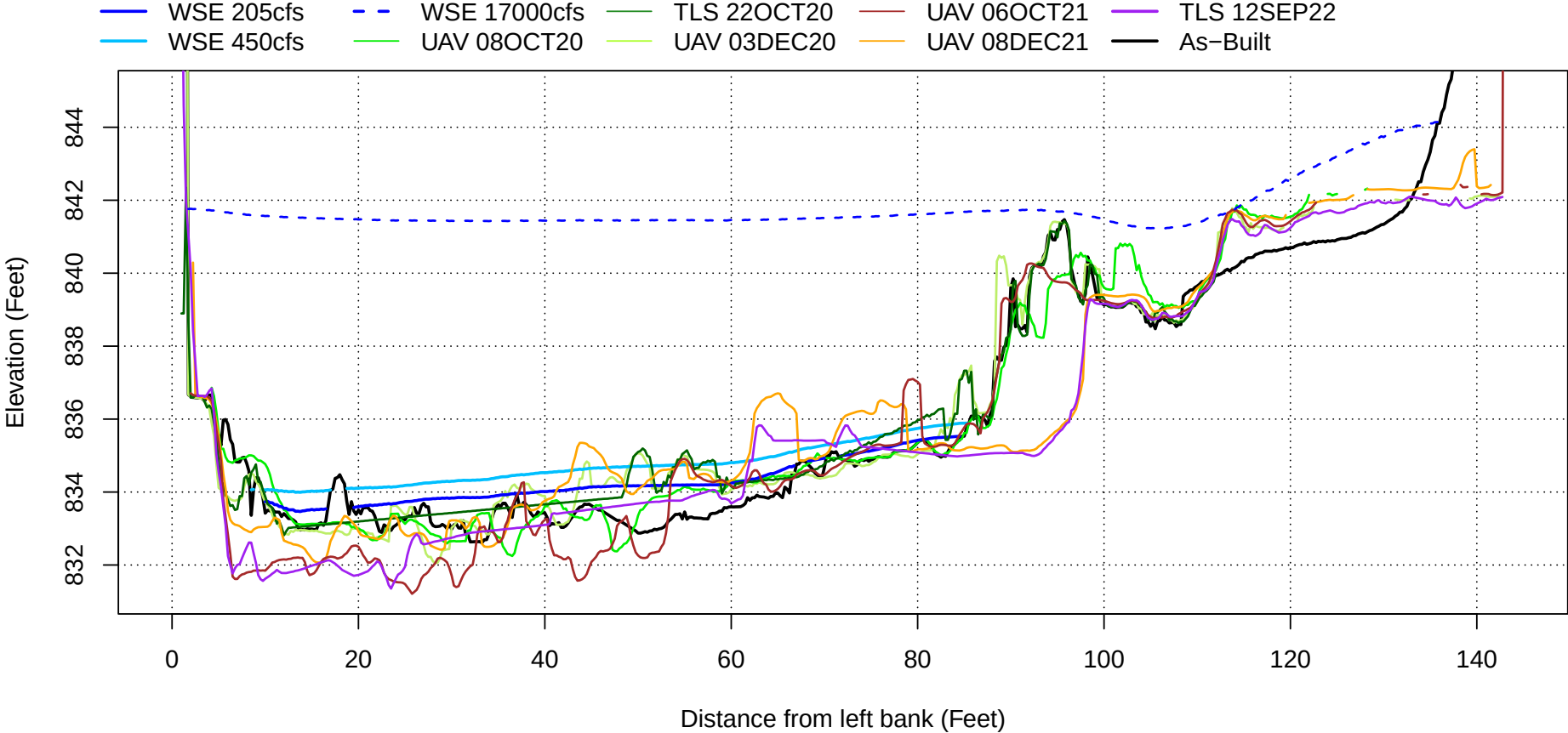


September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker

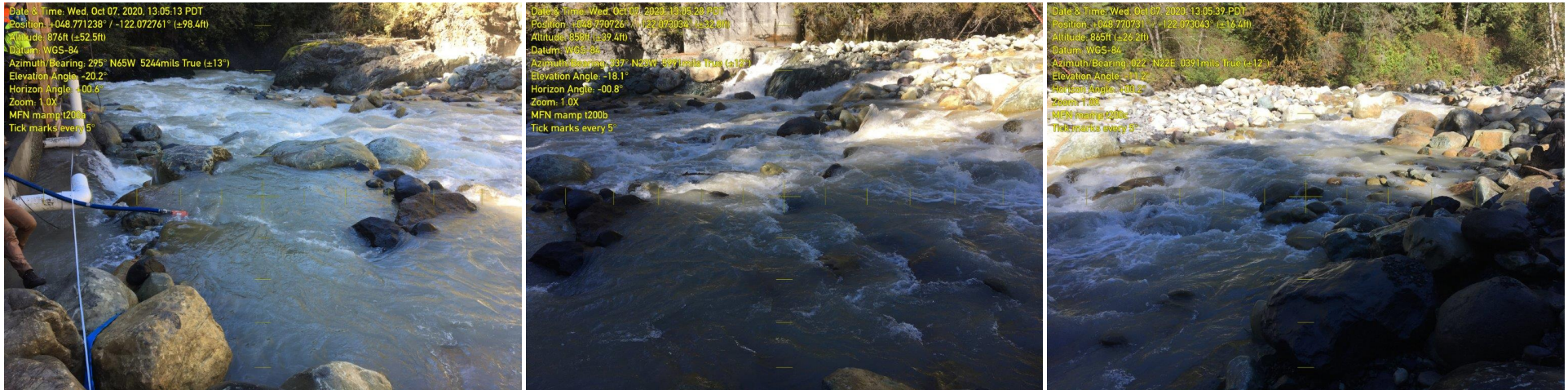




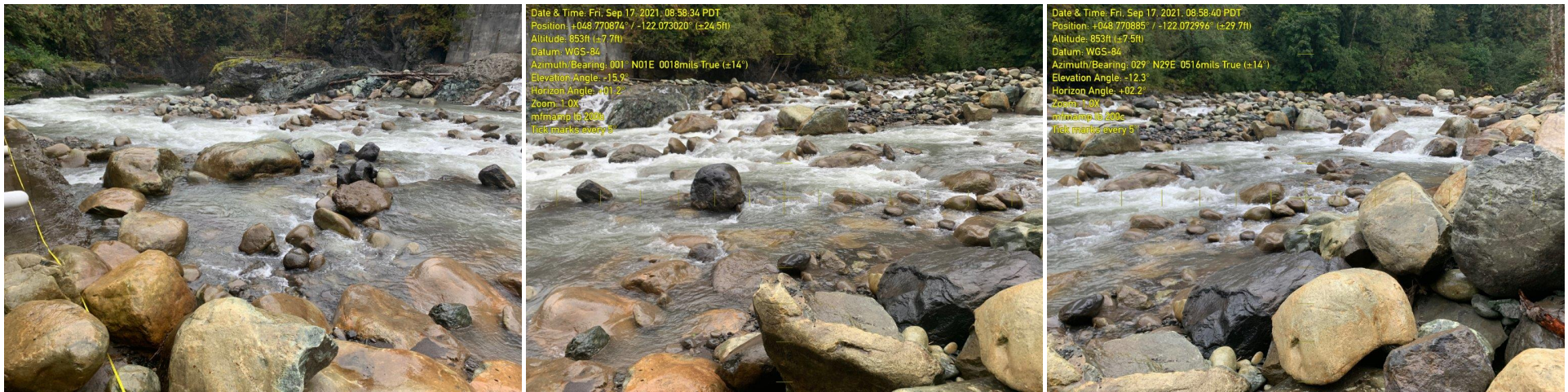


Transect 200

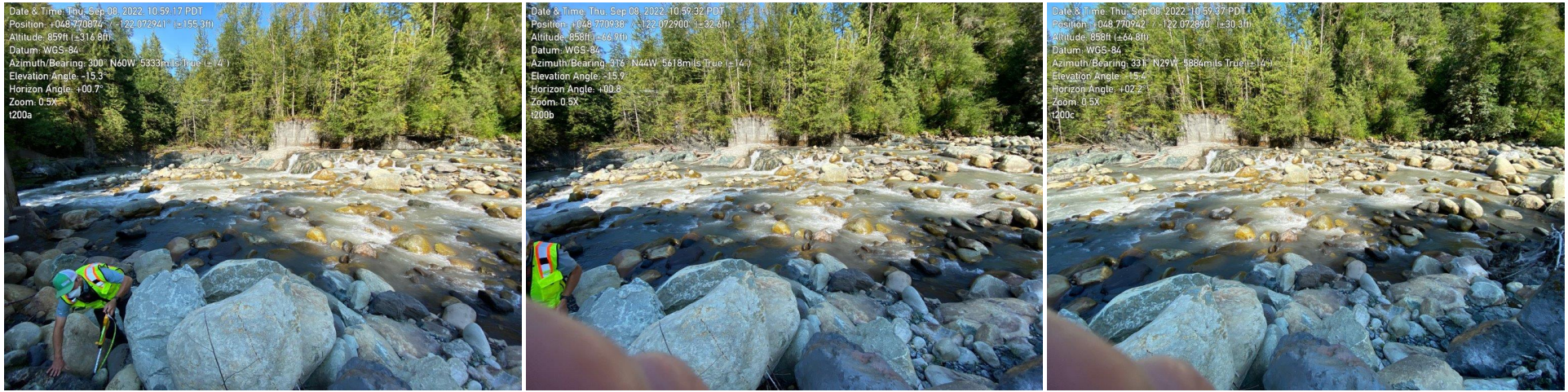
October 2020



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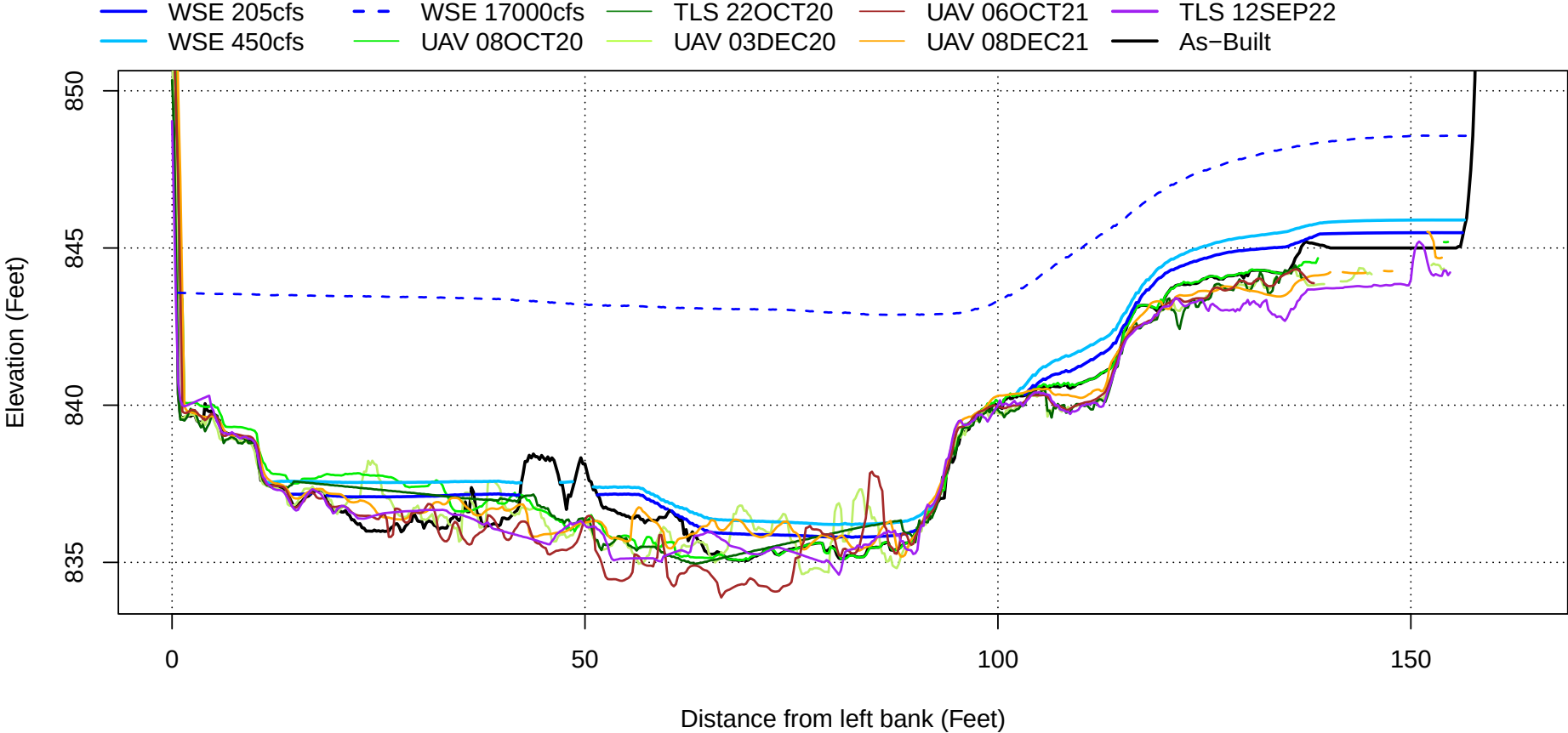


September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker







Transect 220

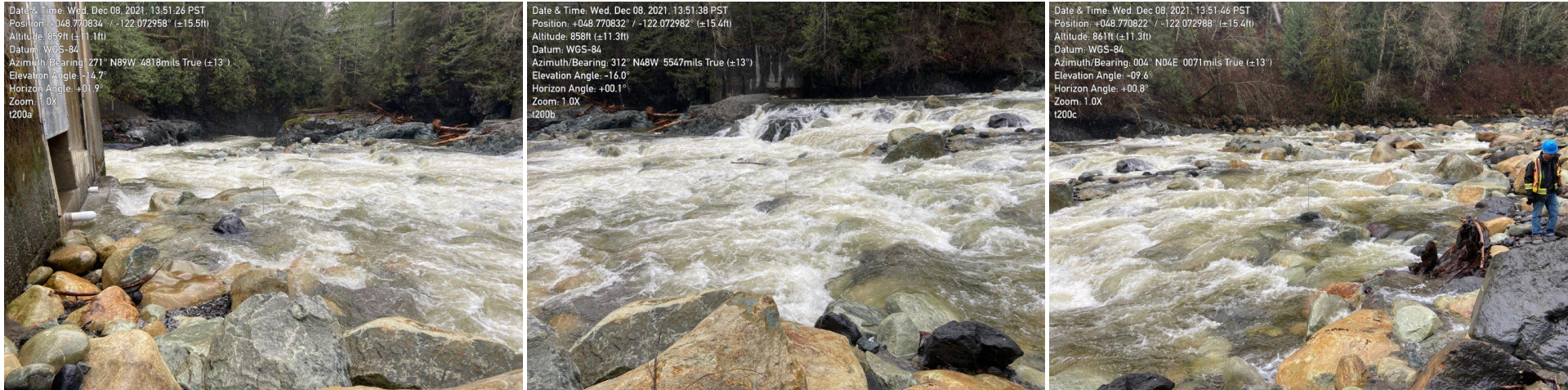
October 2020



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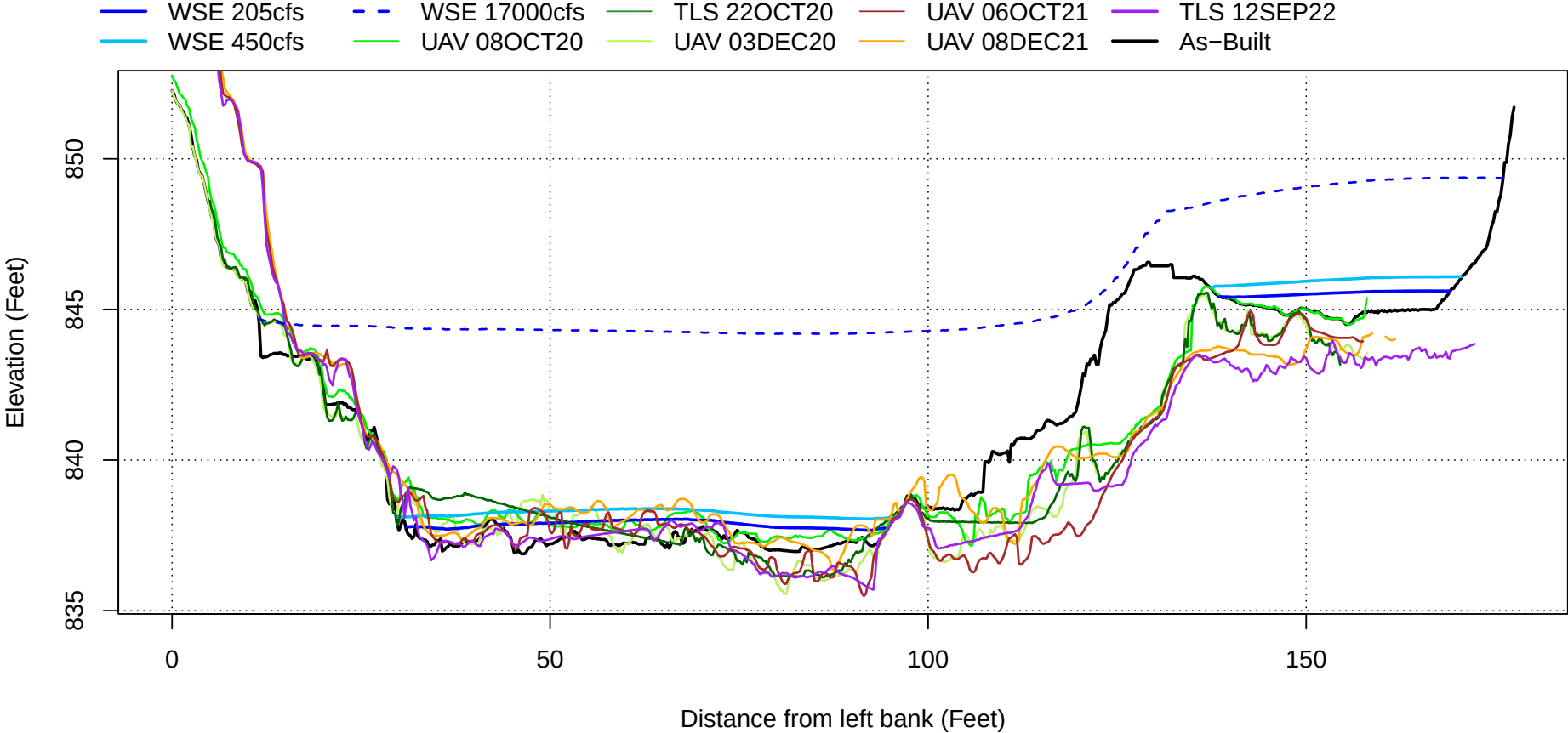


September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker







Transect 241

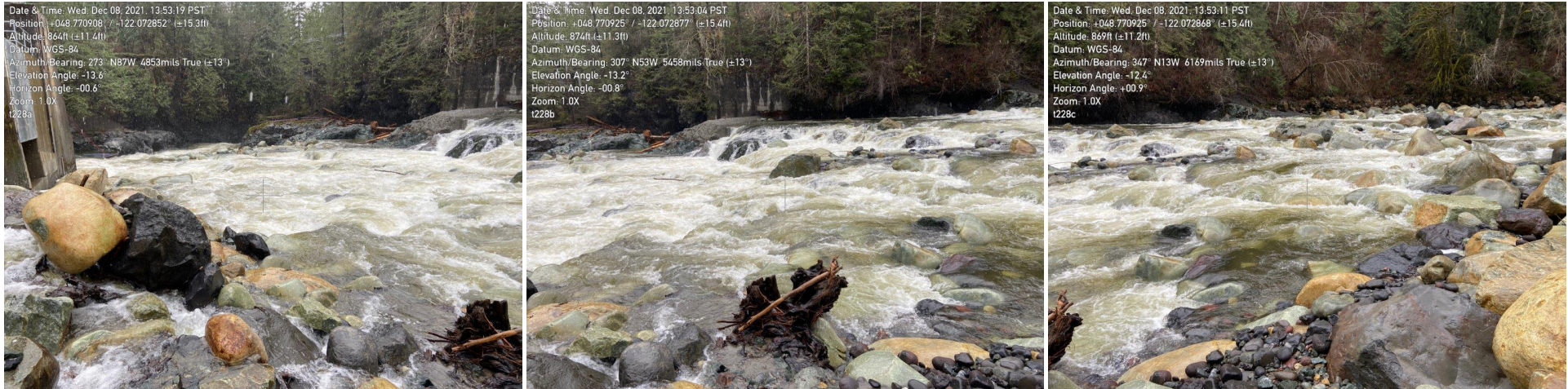
October 2020



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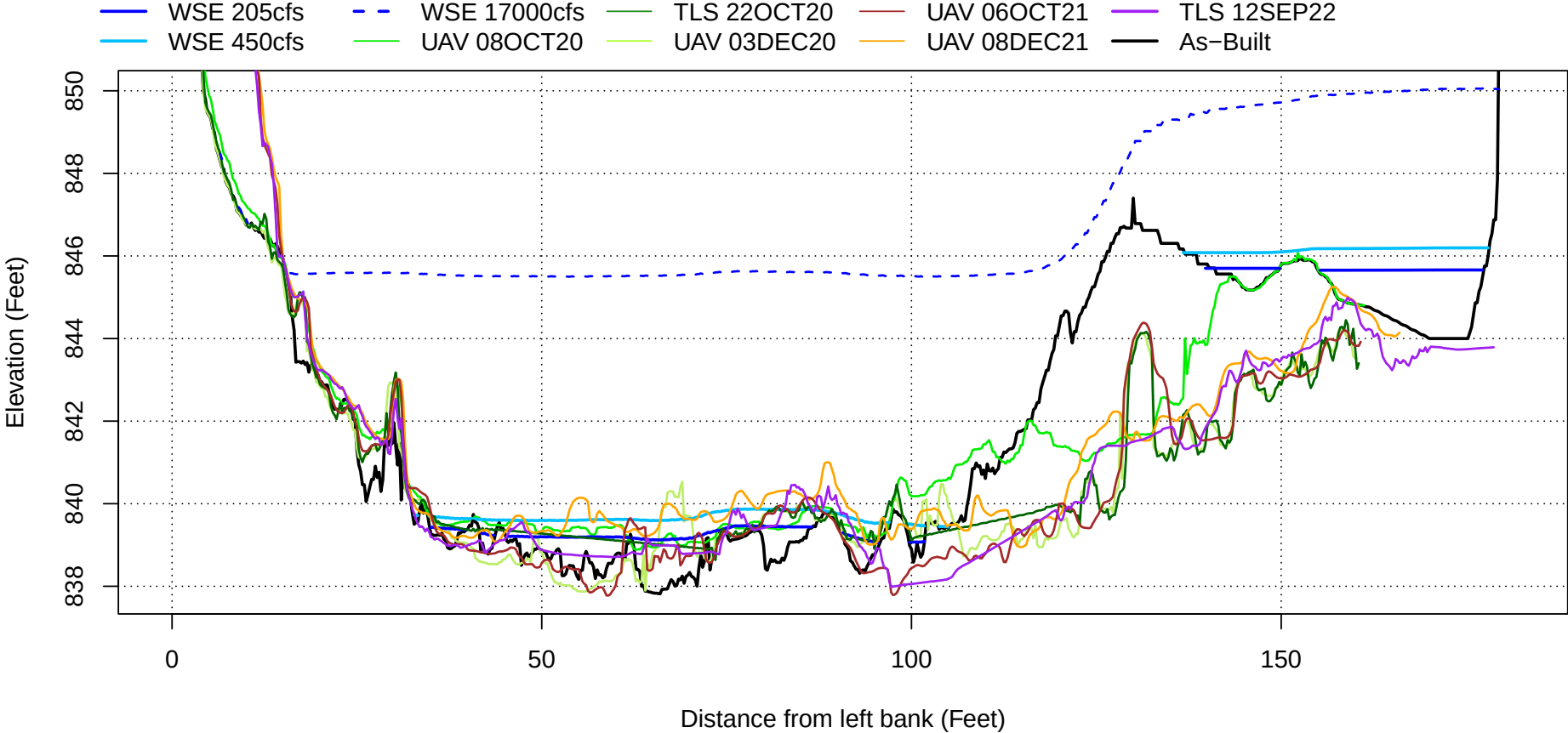


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Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker

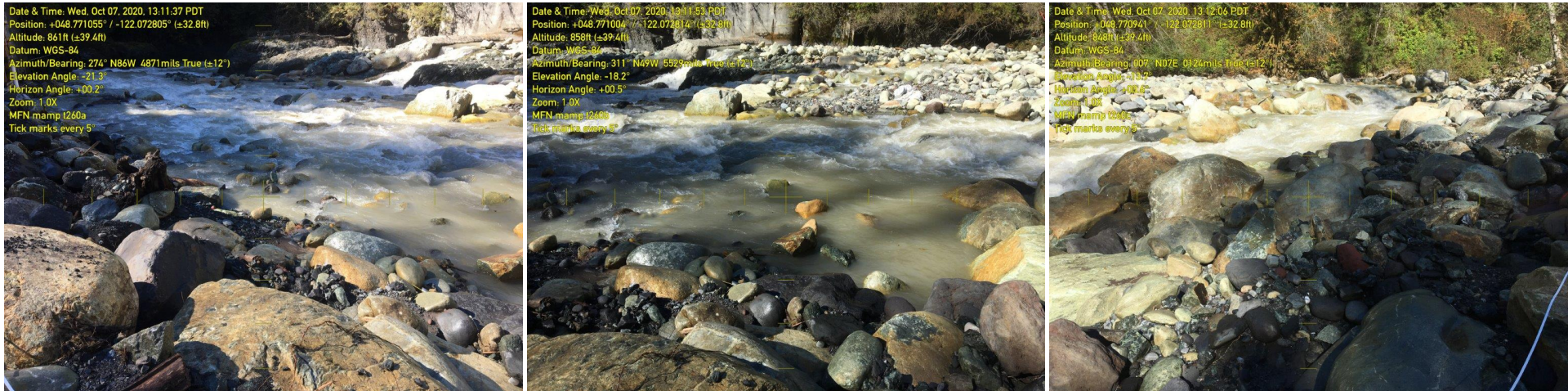




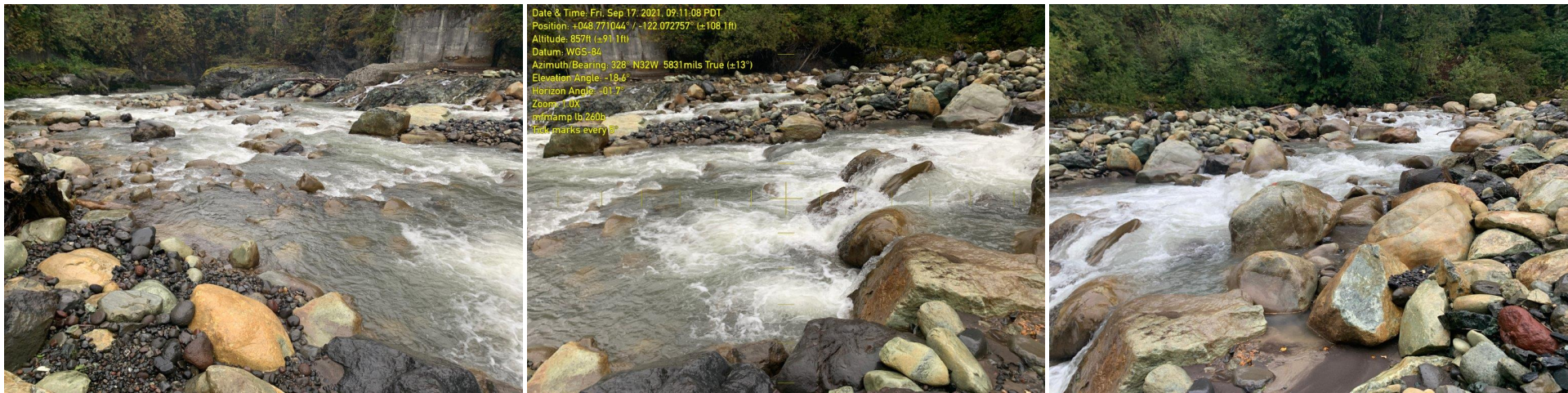


Transect 260

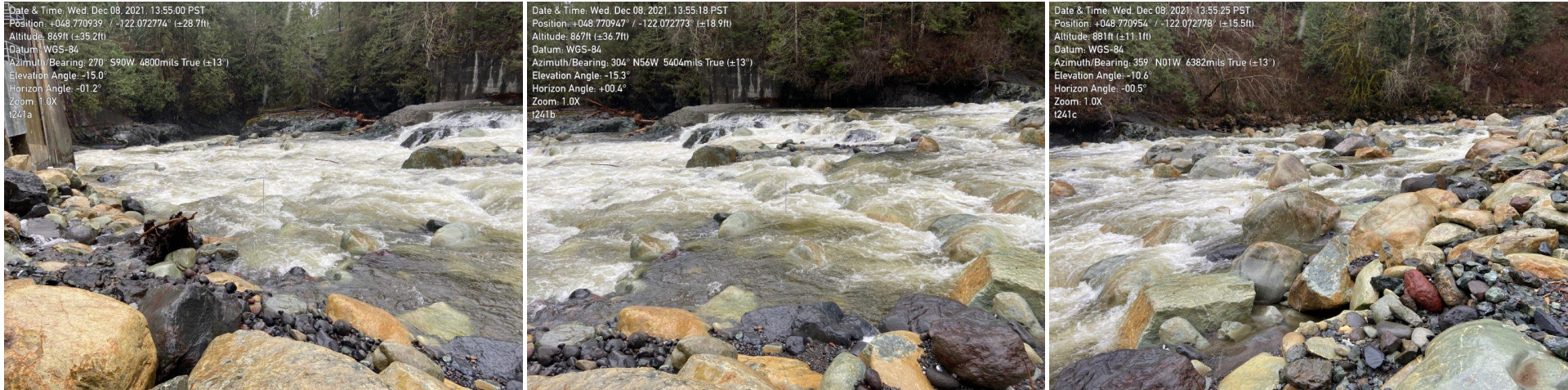
October 2020



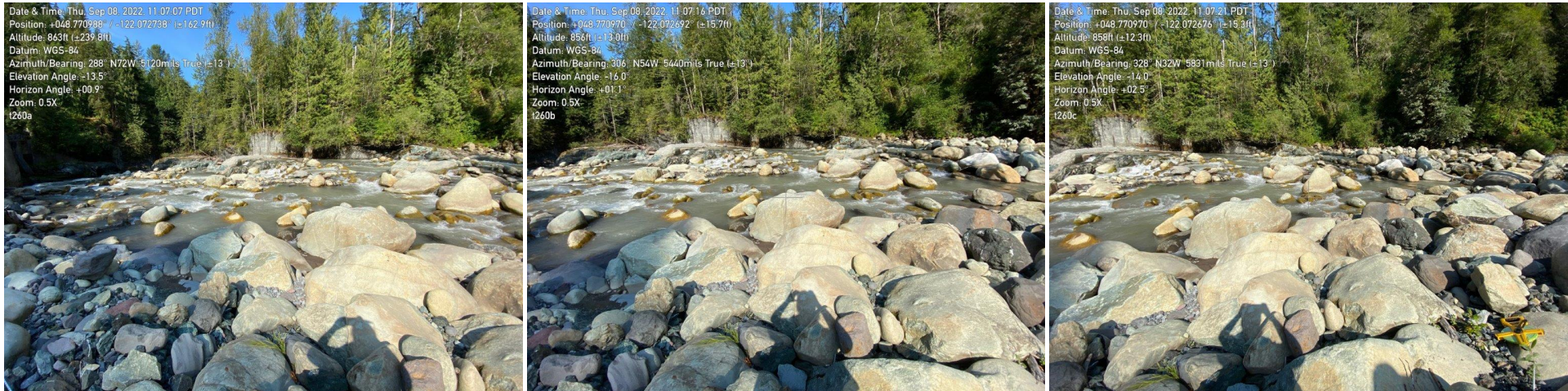
September 2021



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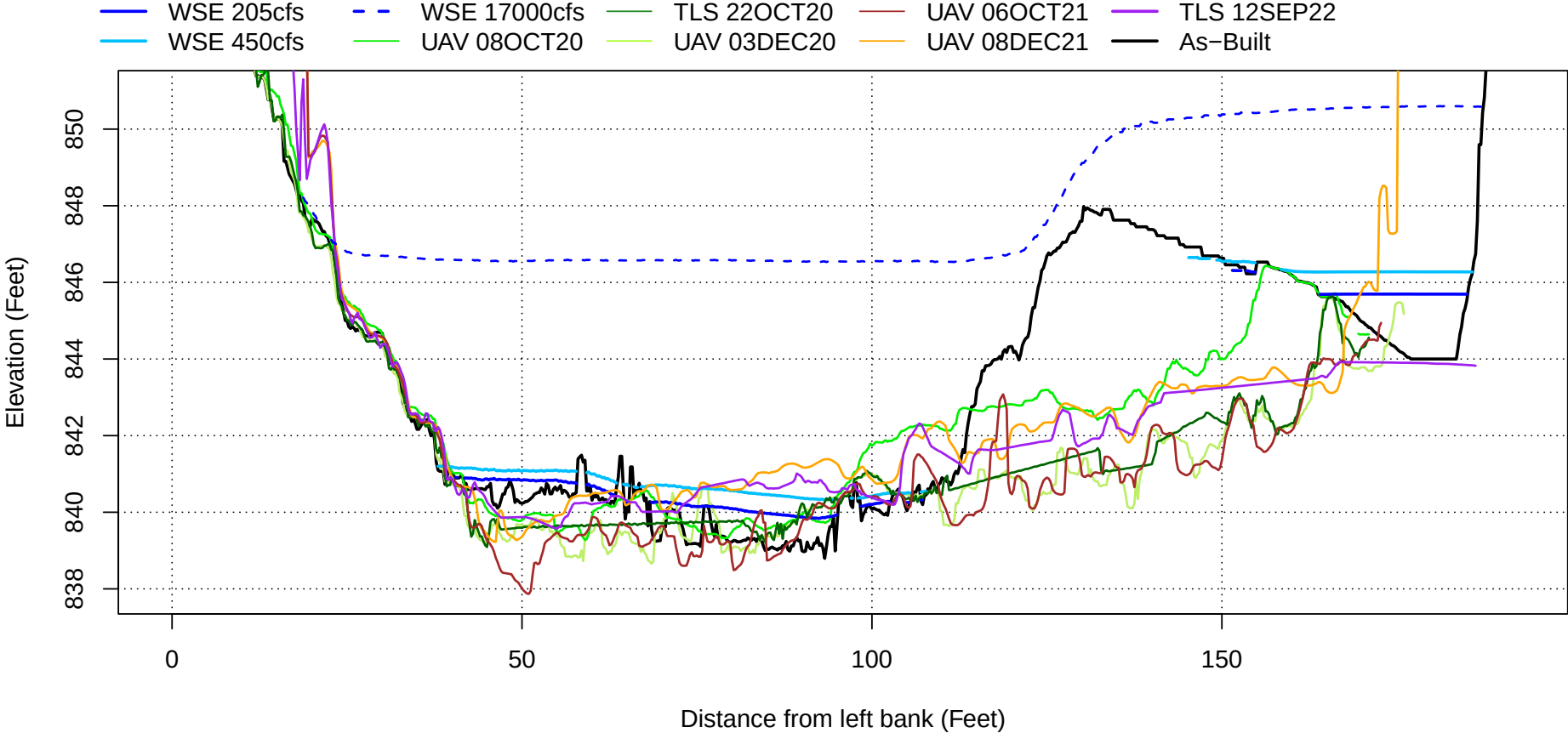


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Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker

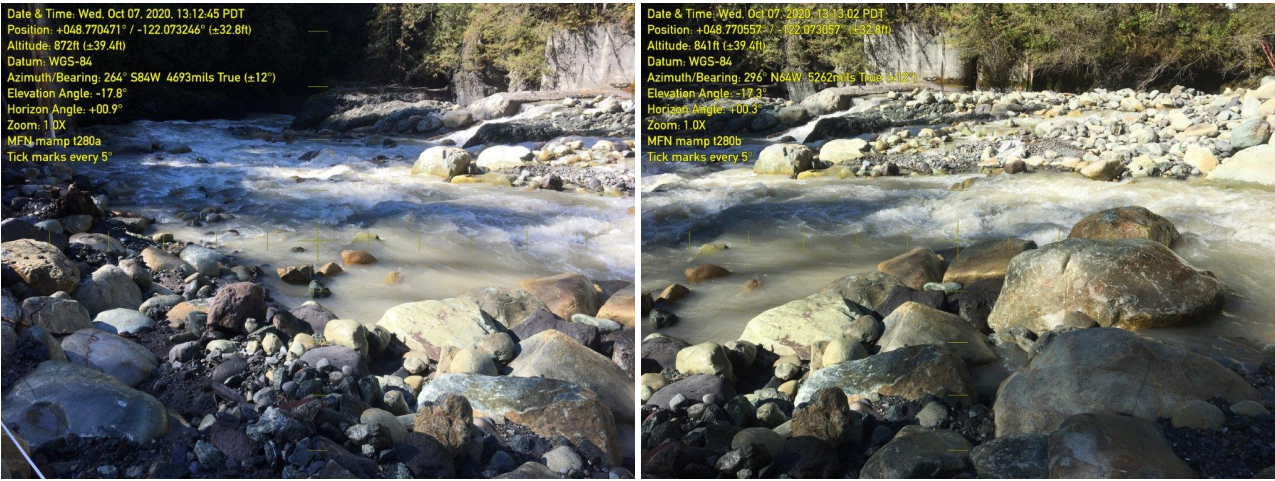




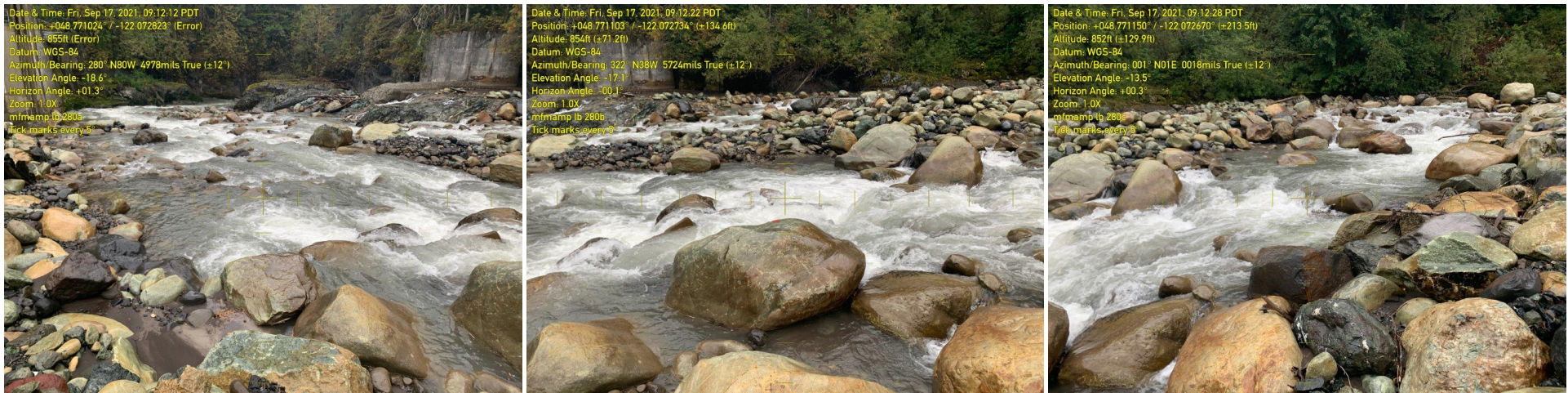


Transect 280

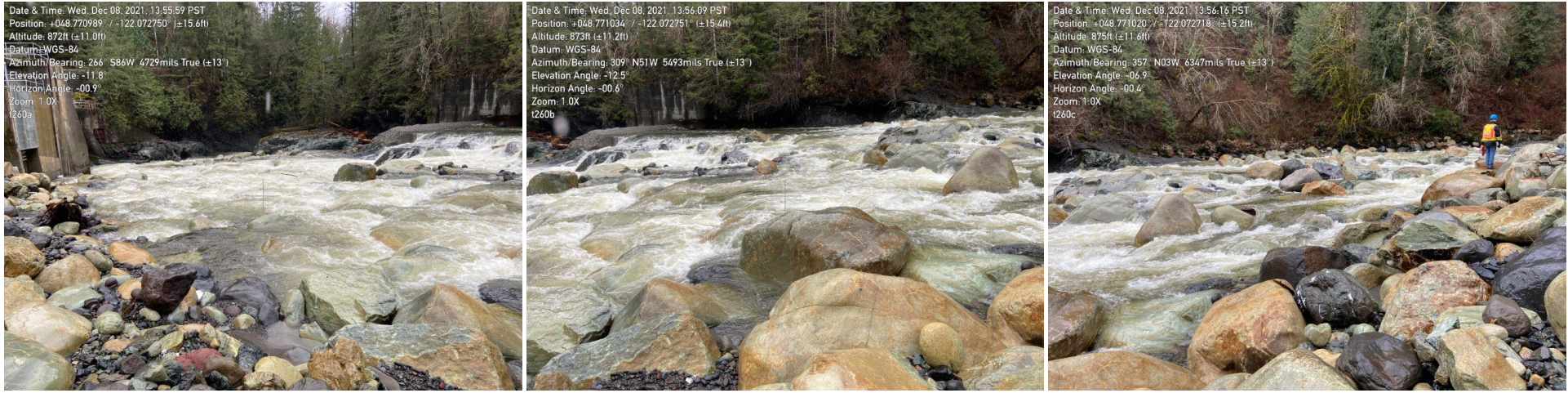
October 2020



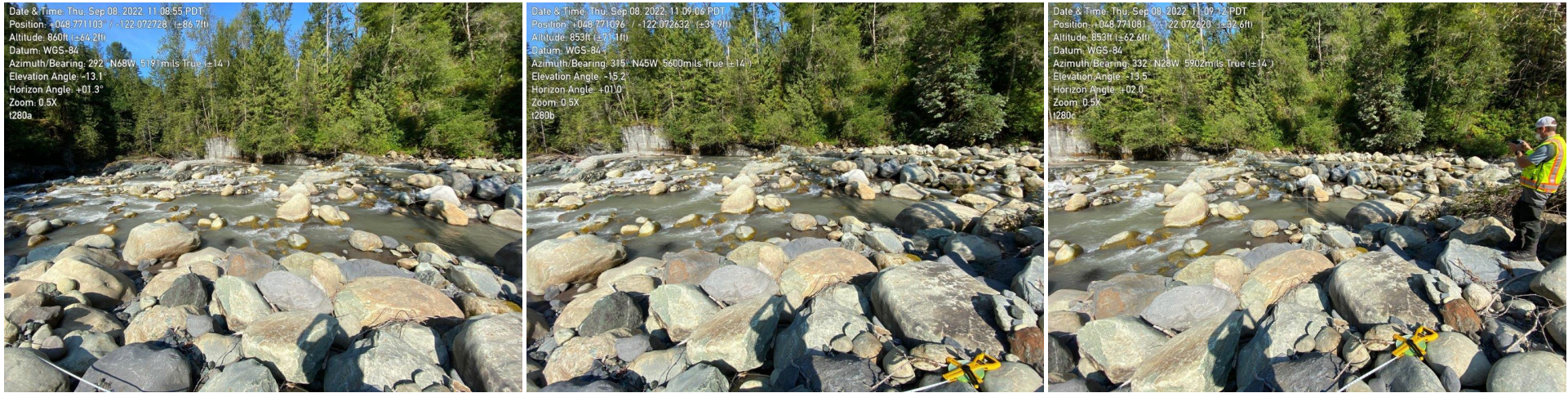
September 2021



December 2021

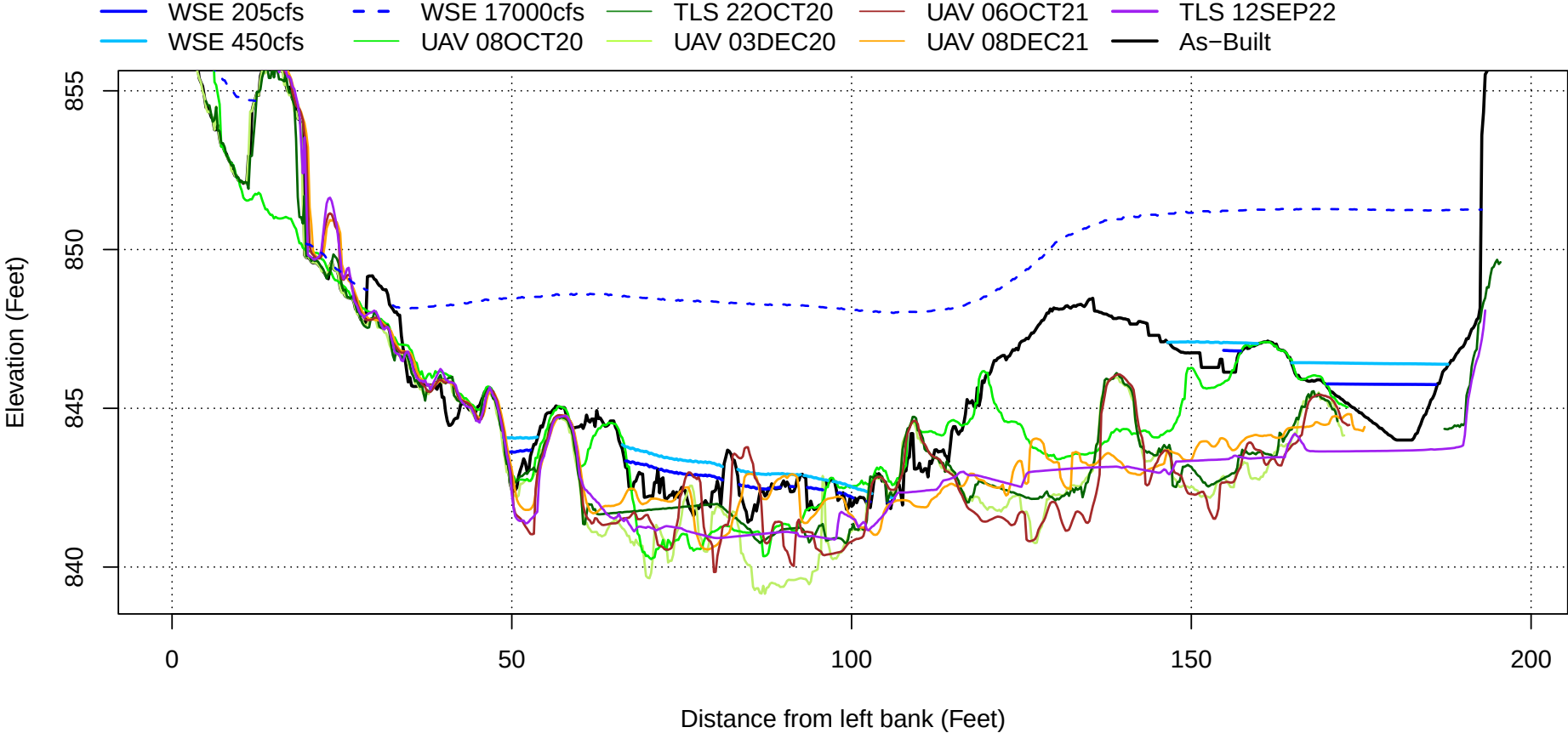


September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker

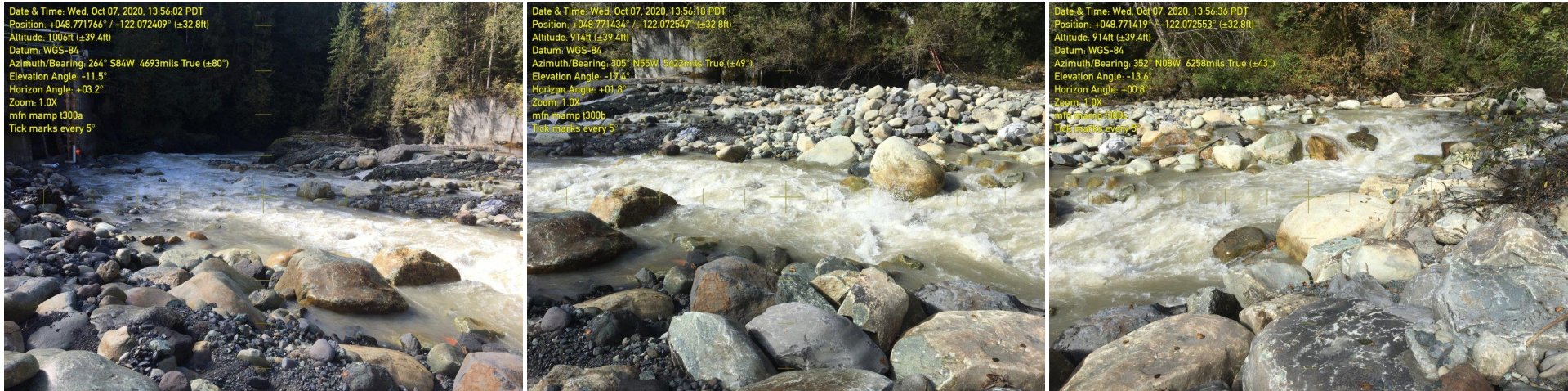




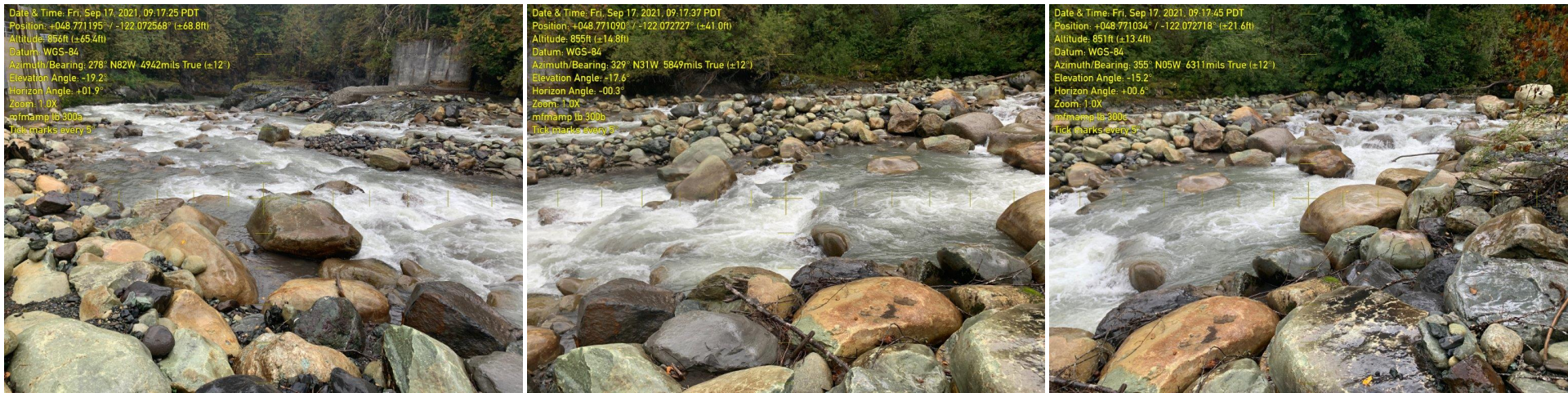


Transect 300

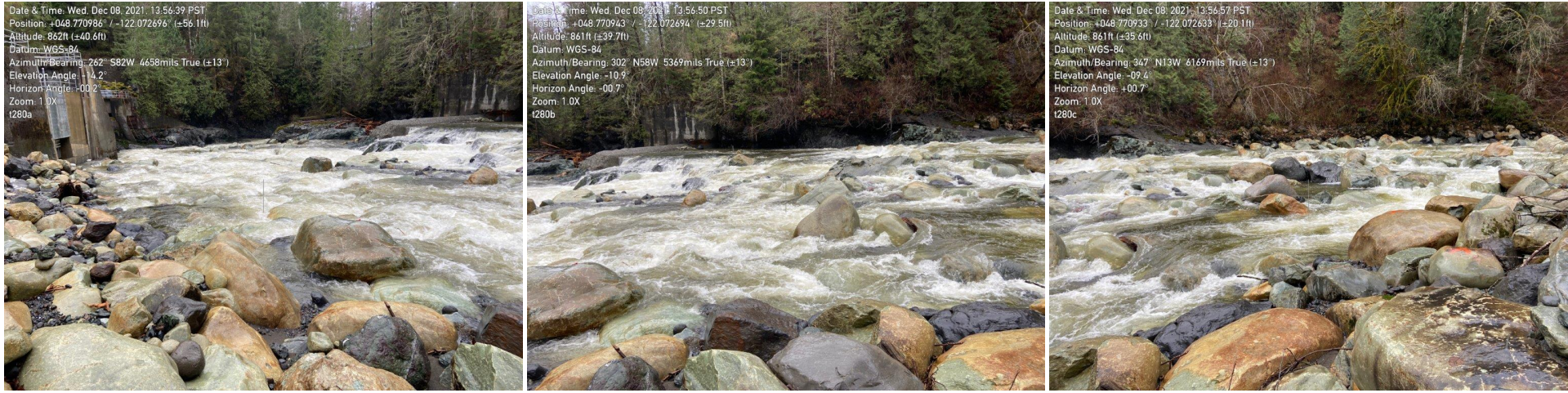
October 2020



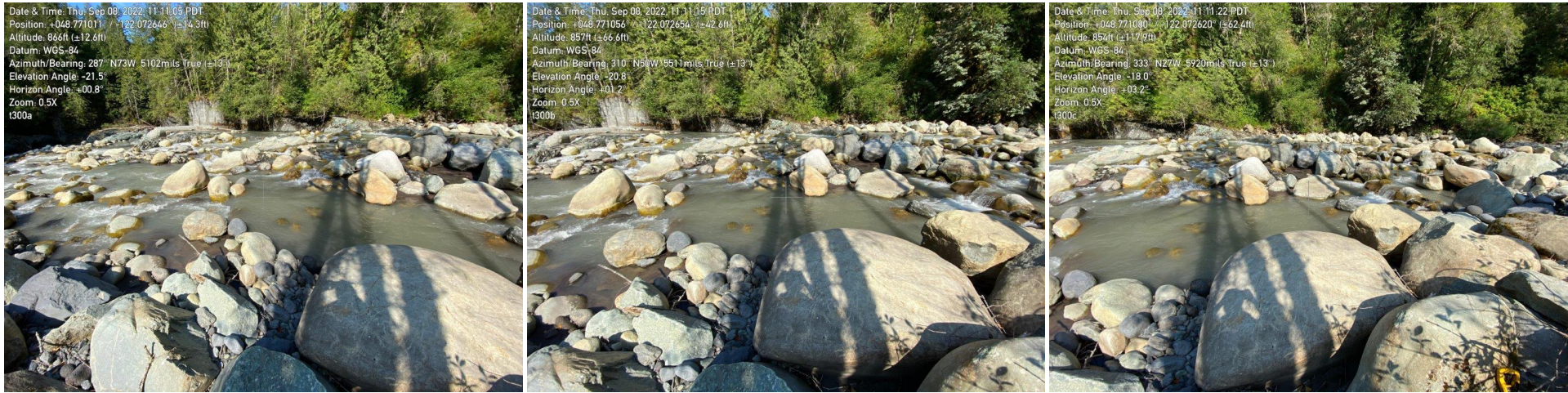
September 2021



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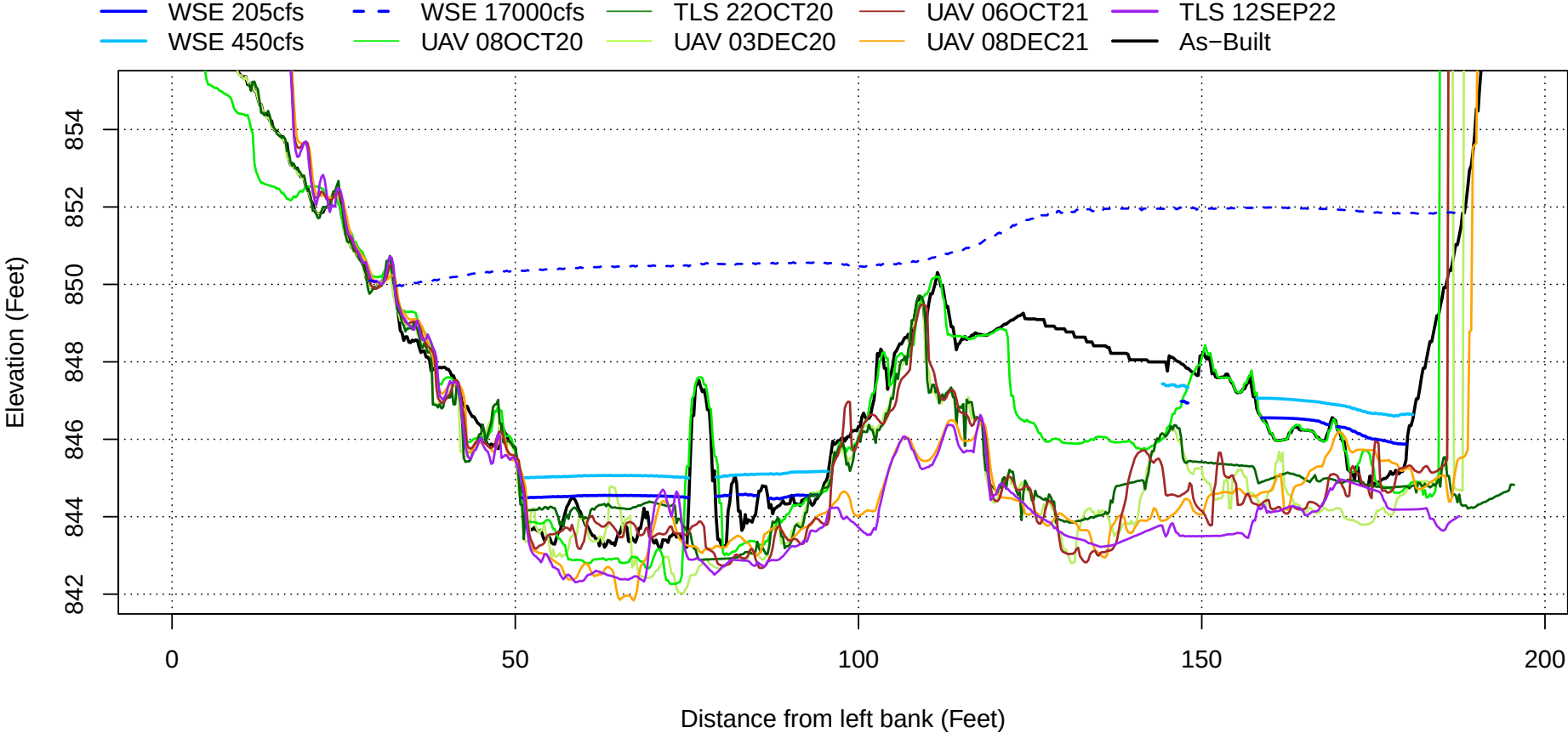


September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker

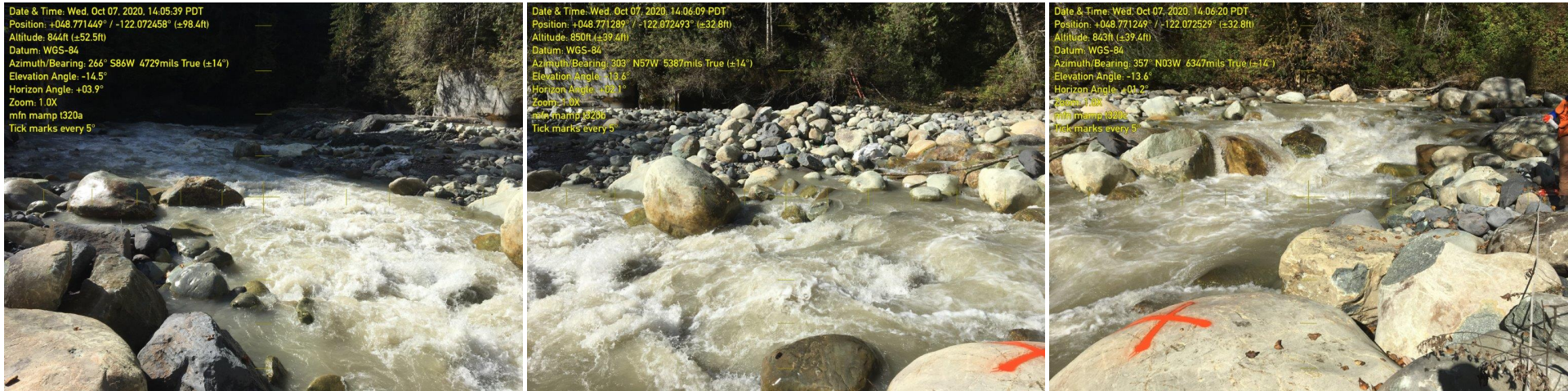






Transect 320

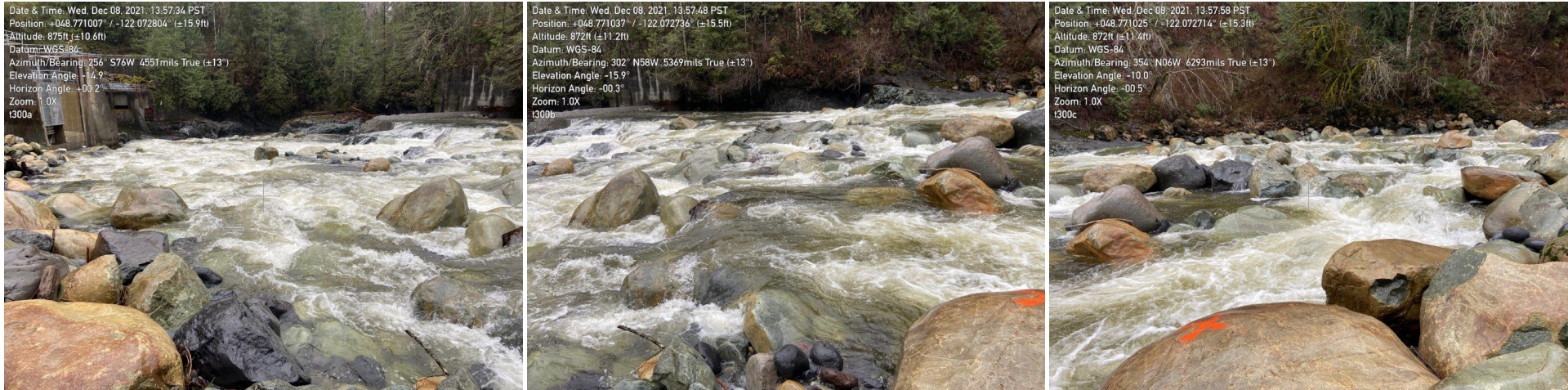
October 2020



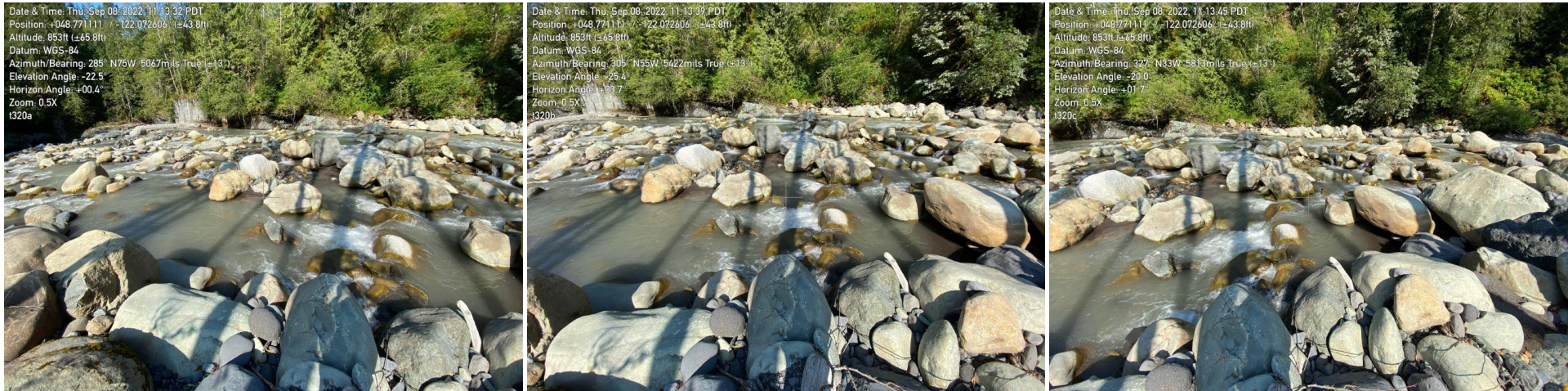
September 2021



December 2021

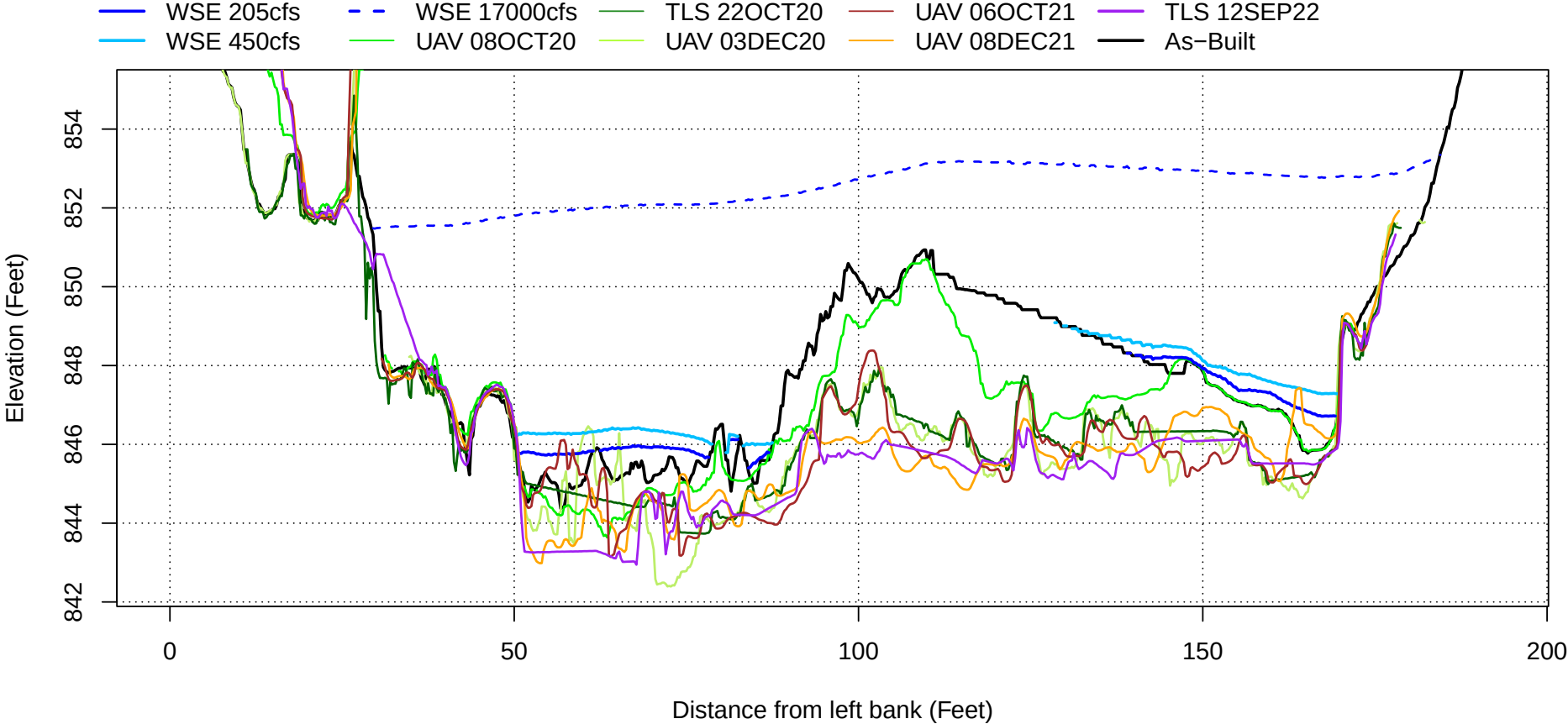


September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker

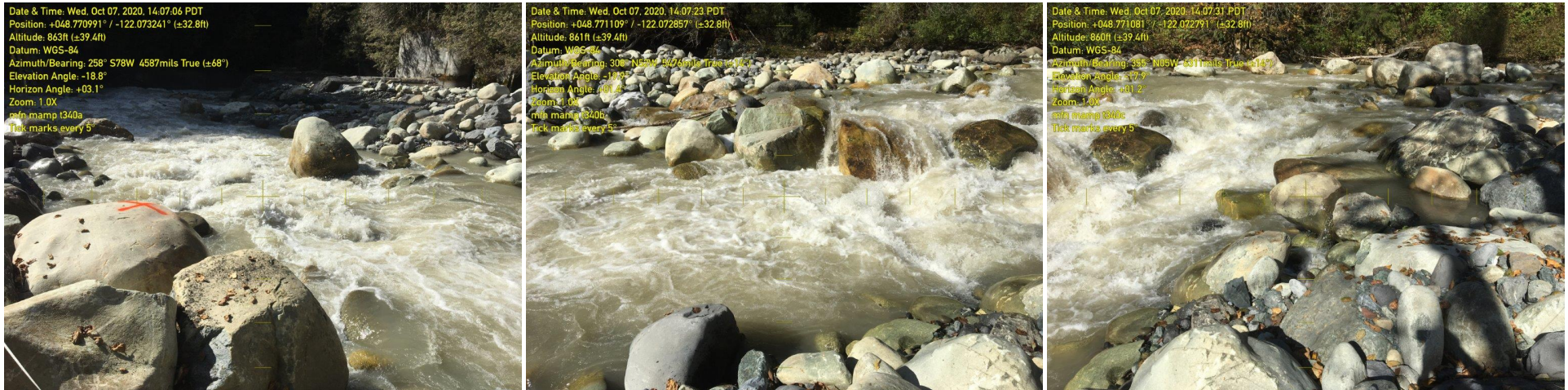




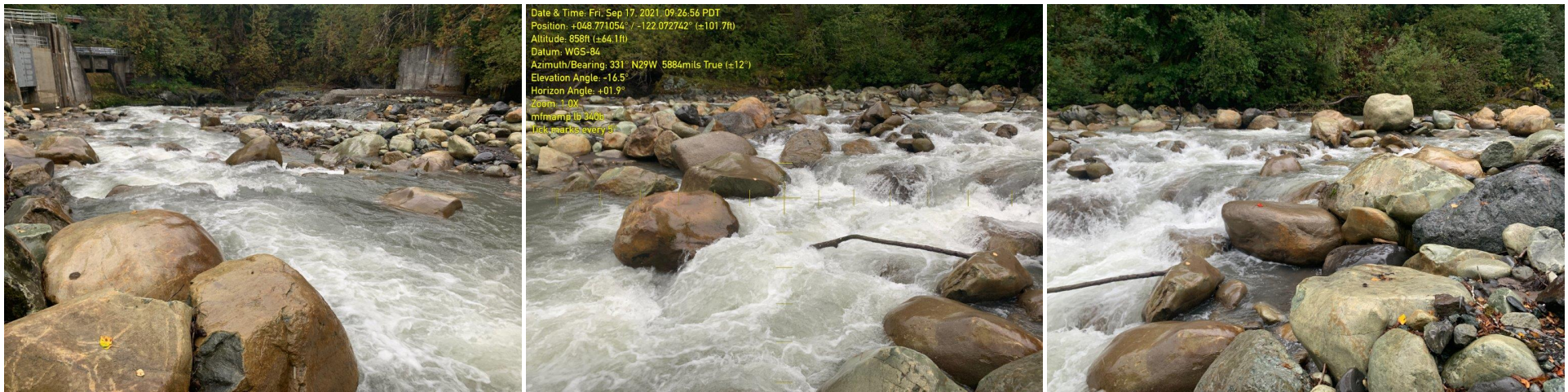


Transect 340

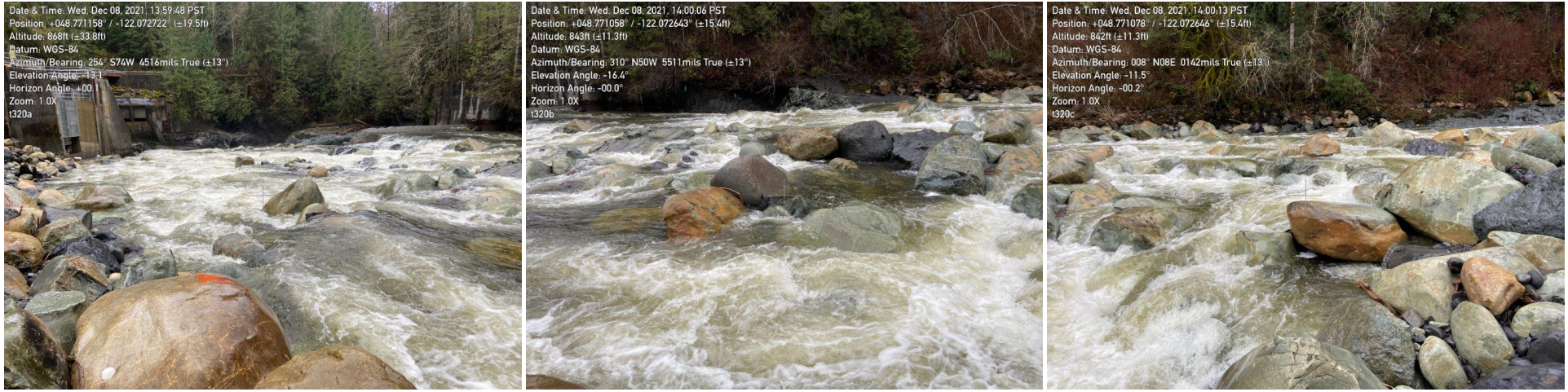
October 2020



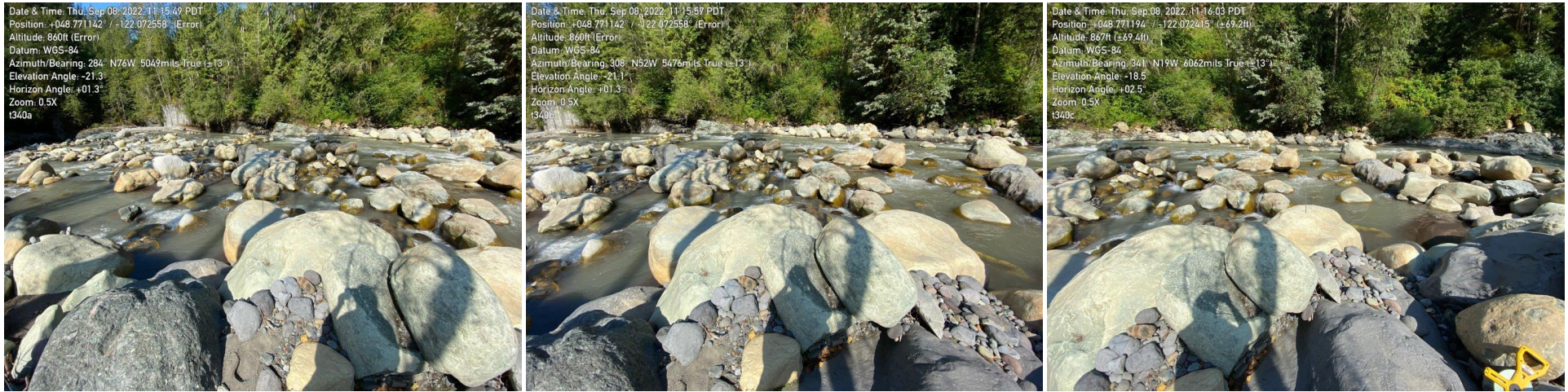
September 2021



December 2021

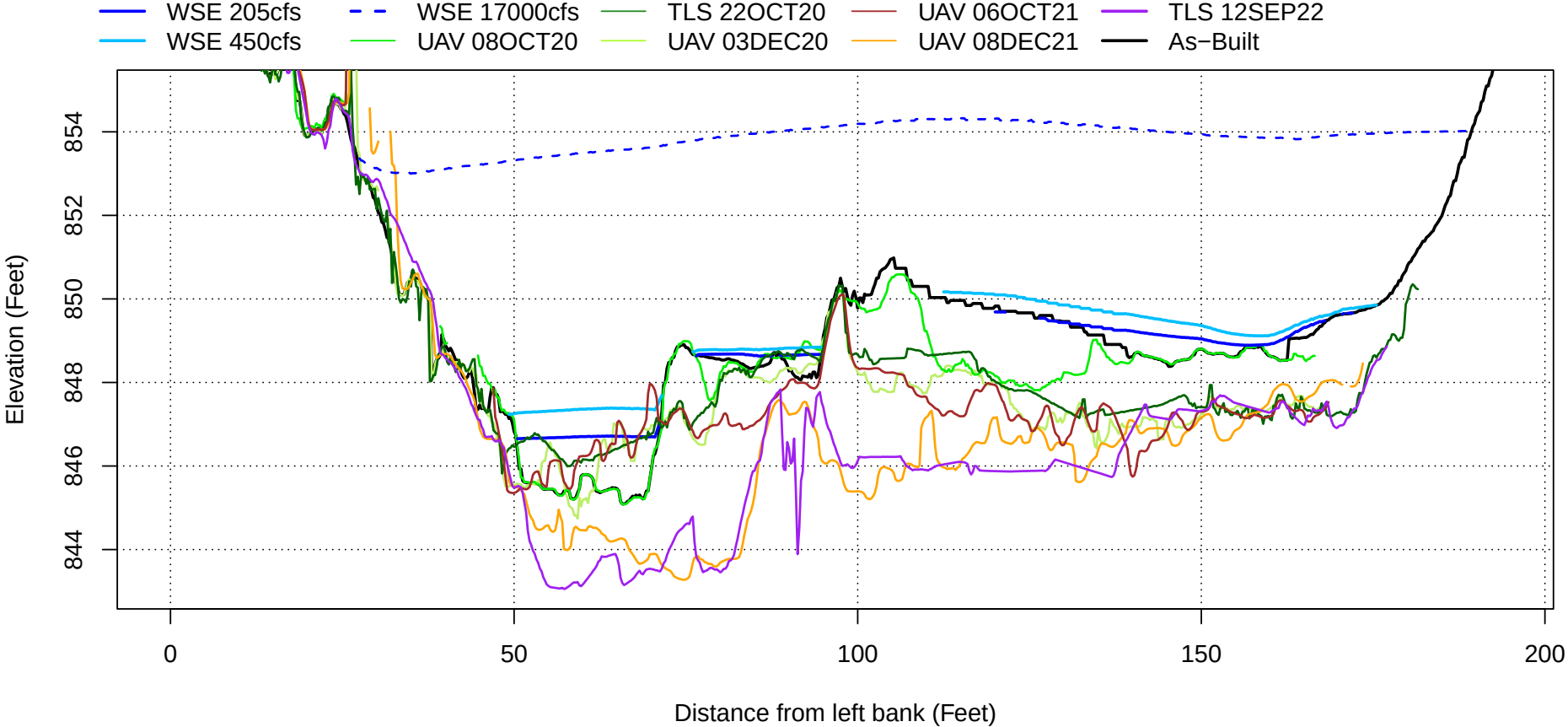


September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker

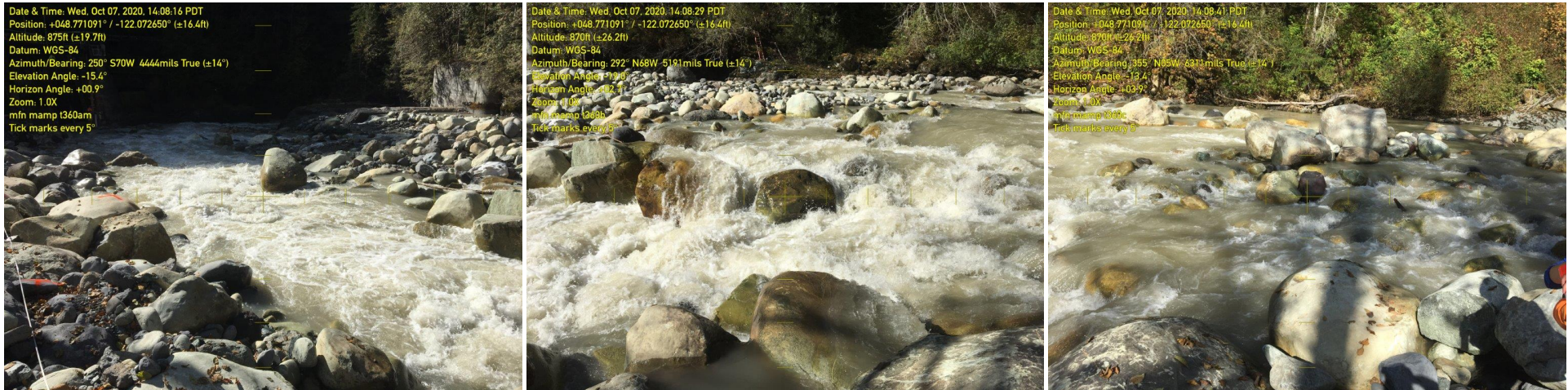




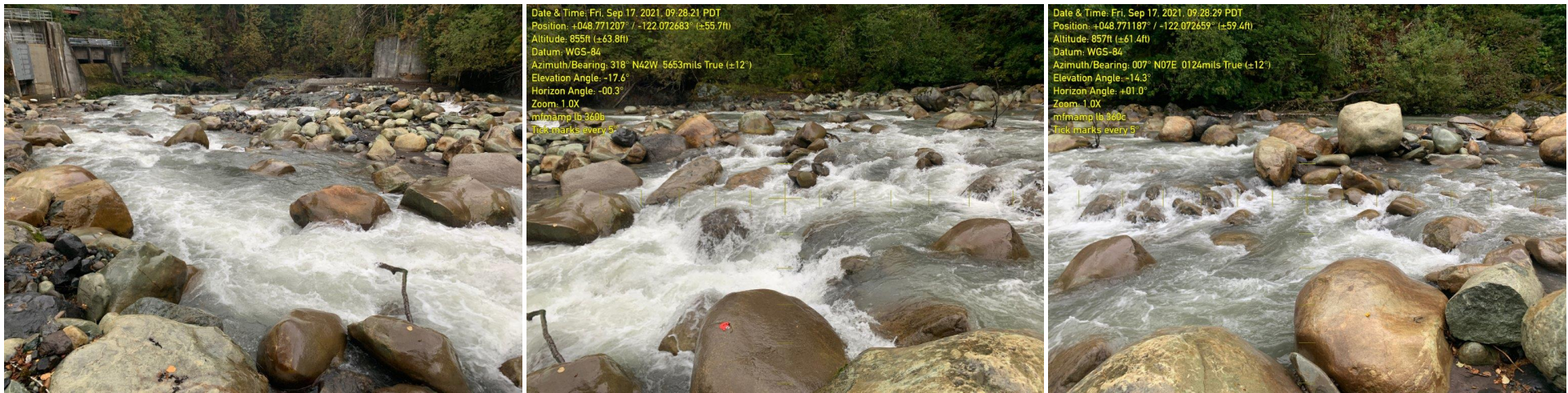


Transect 360

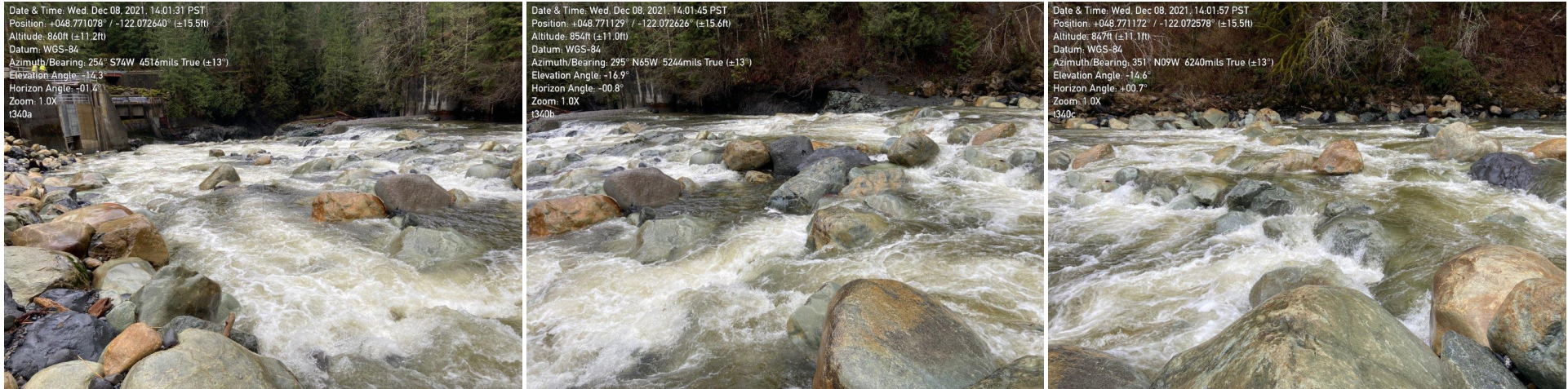
October 2020



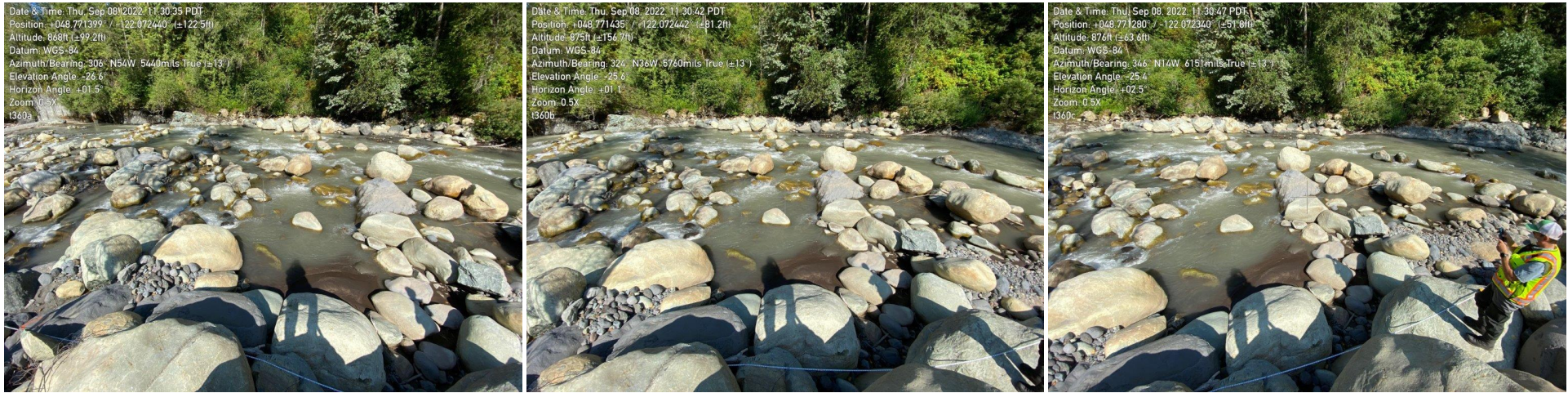
September 2021



December 2021

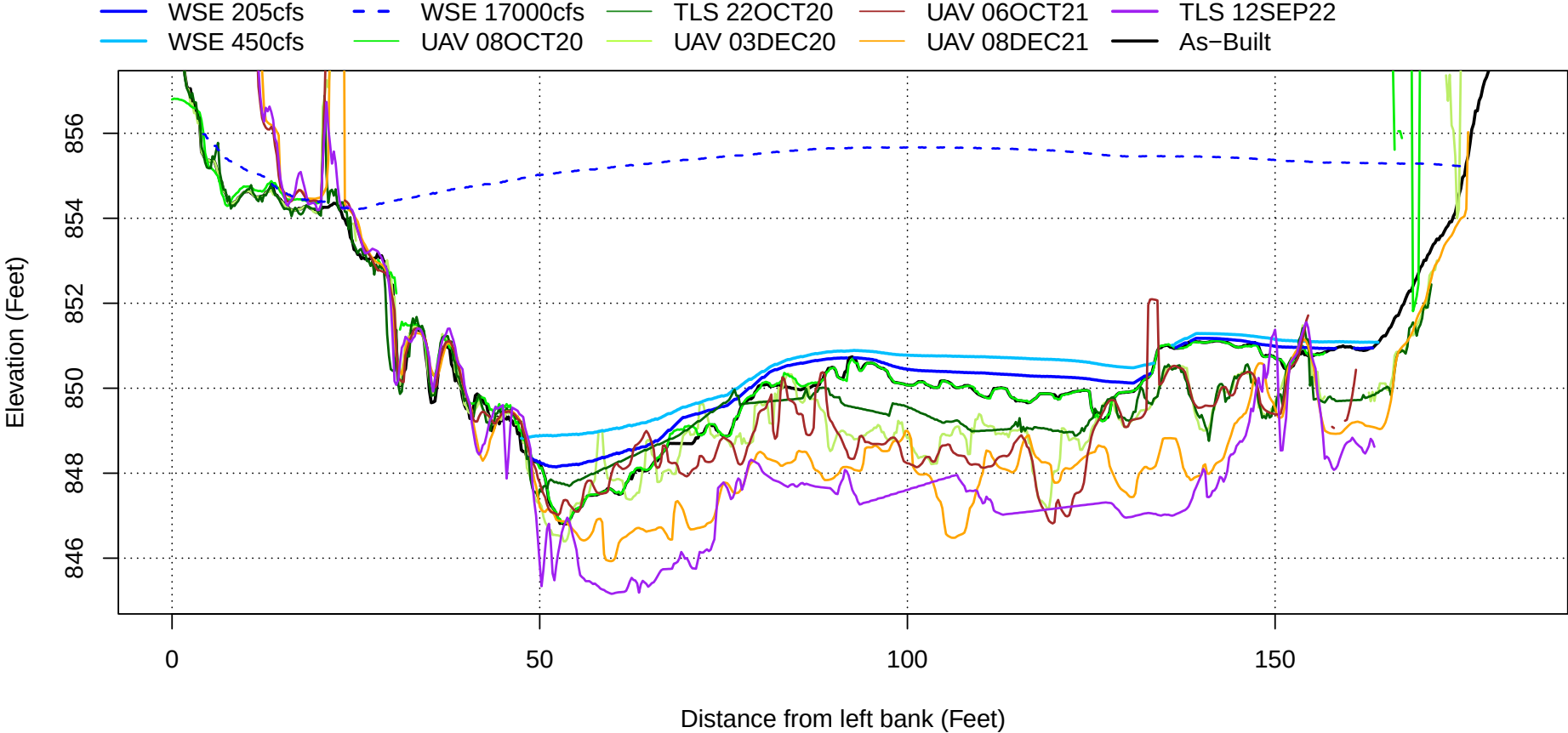


September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker

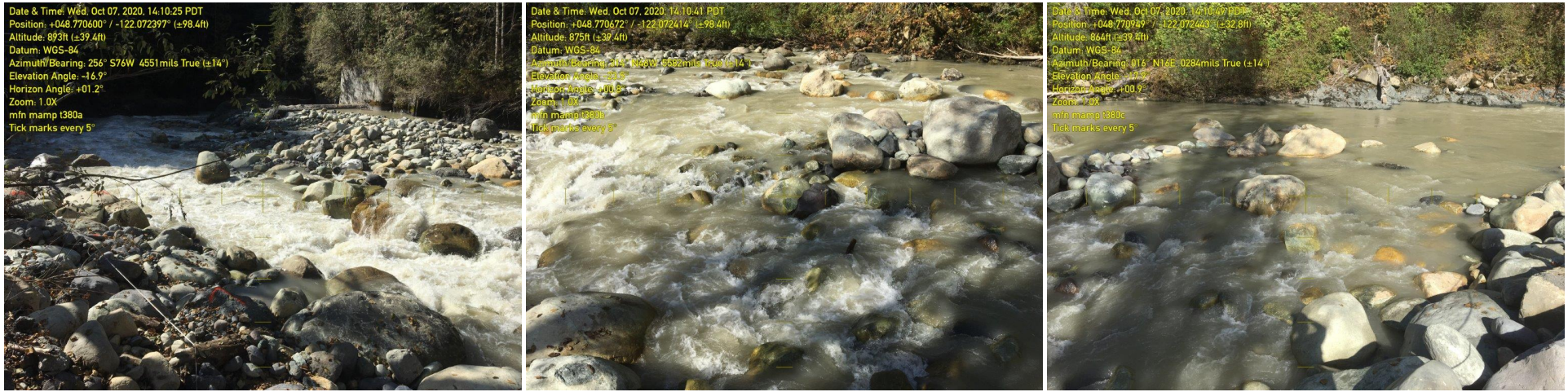






Transect 380

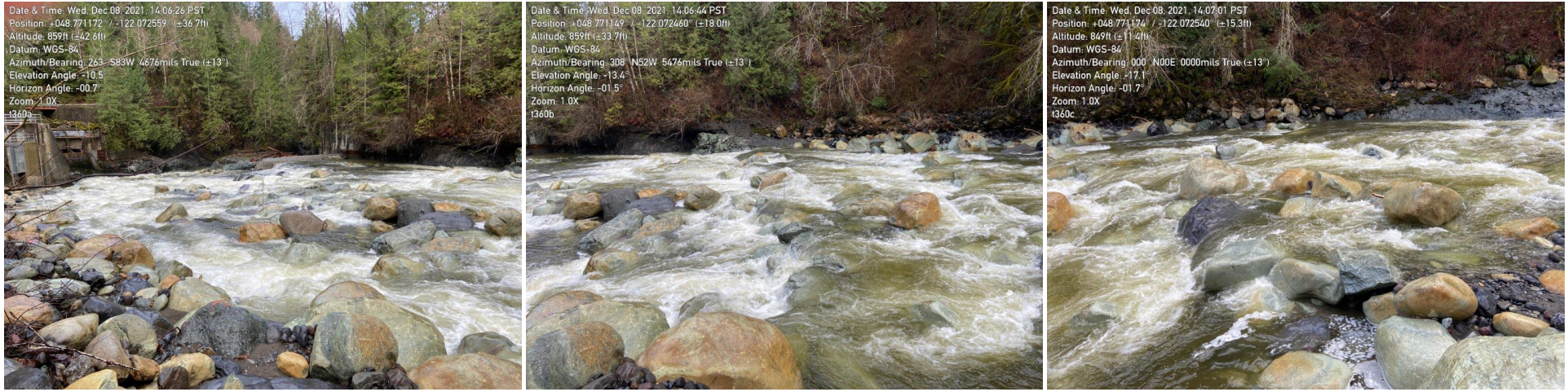
October 2020



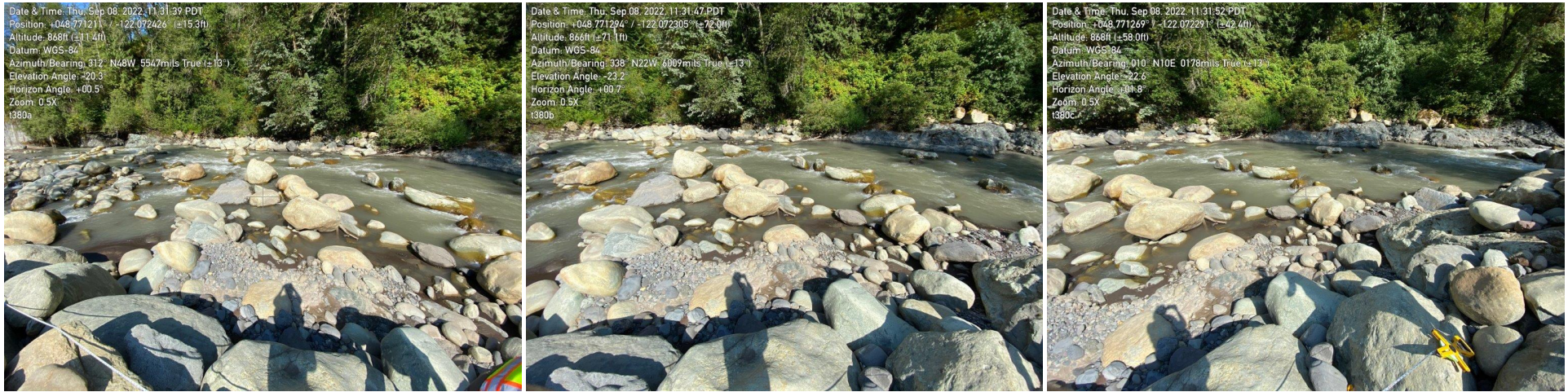
September 2021



December 2021

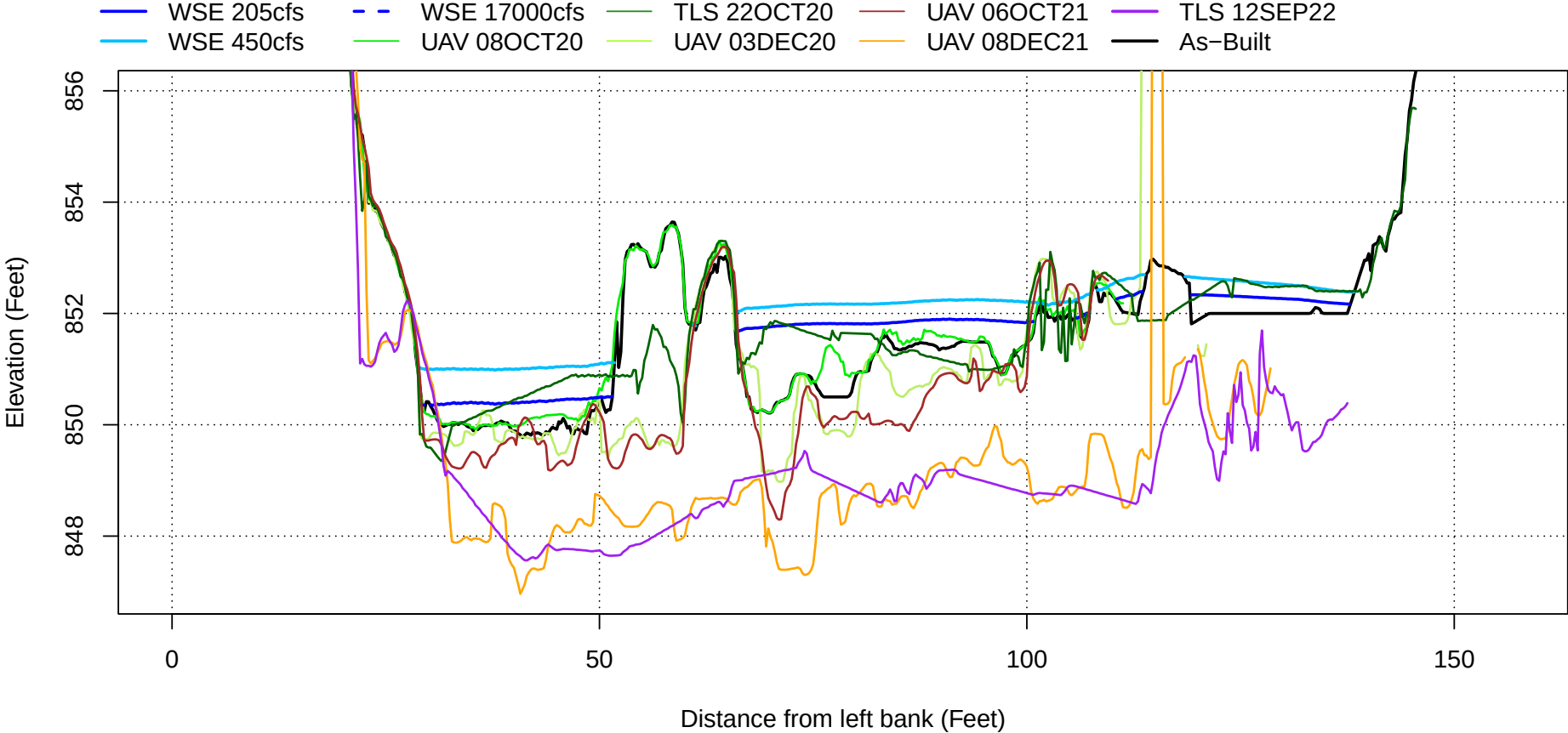


September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker





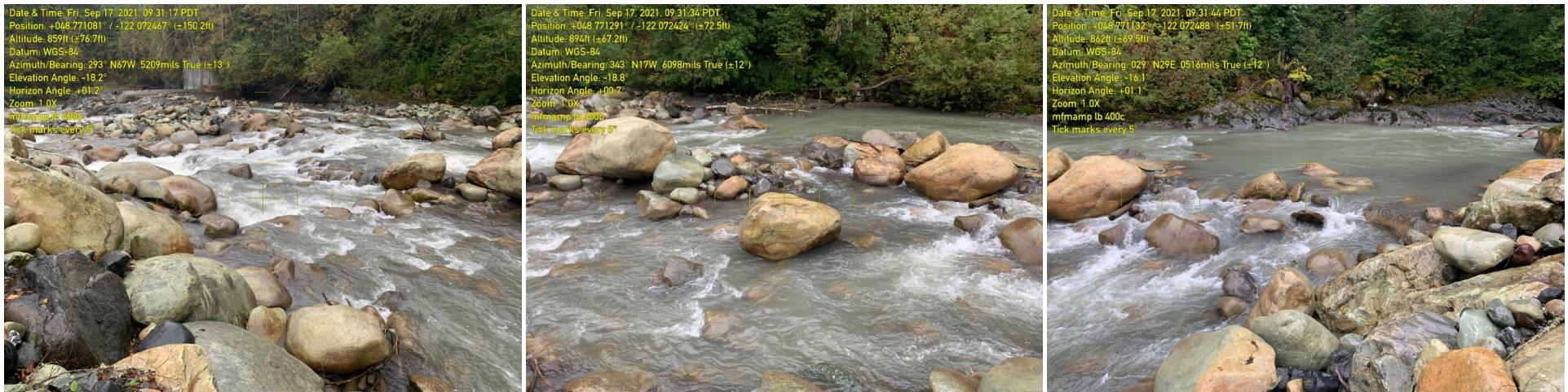


Transect 400

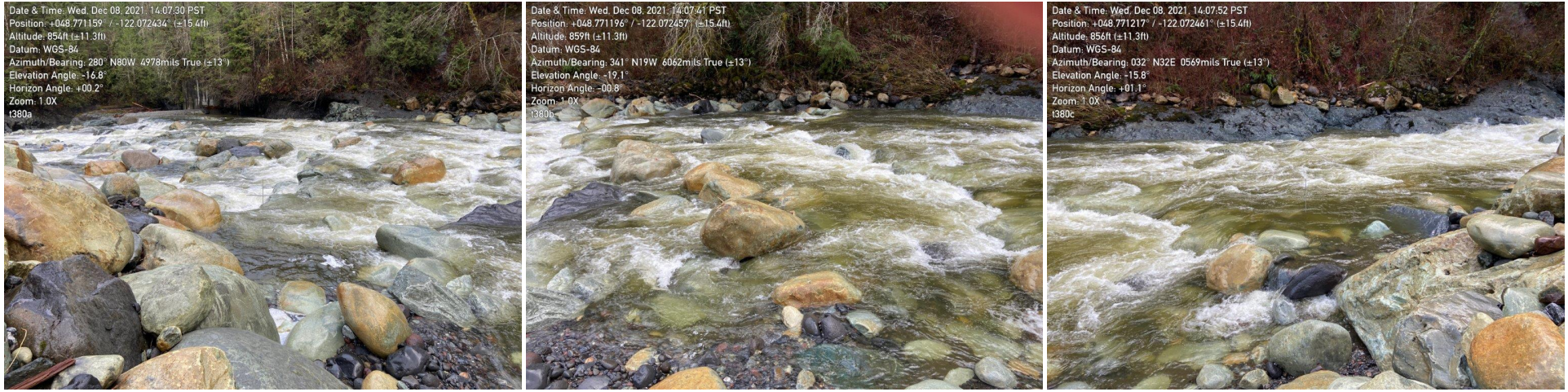
October 2020



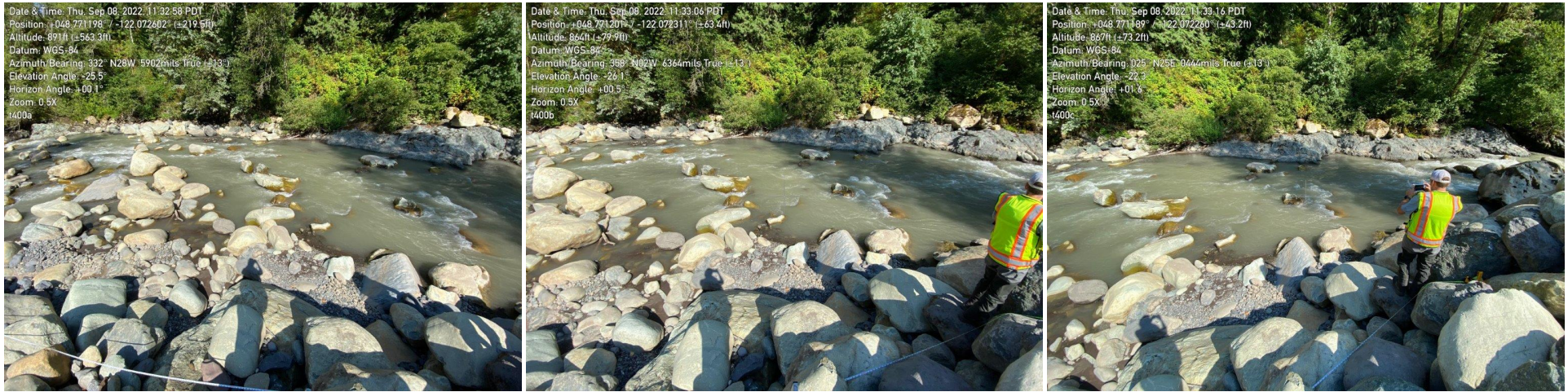
September 2021



December 2021

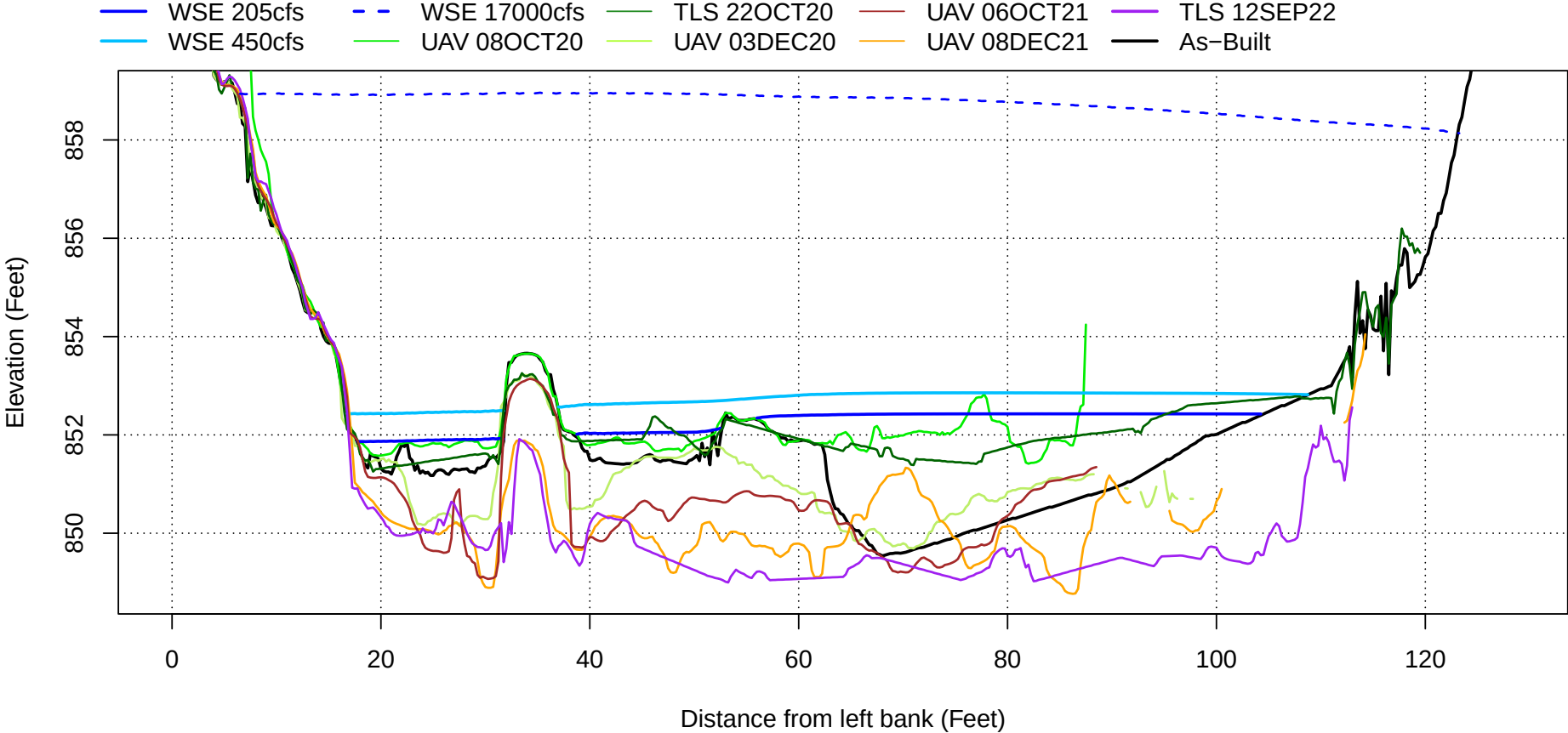


September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker

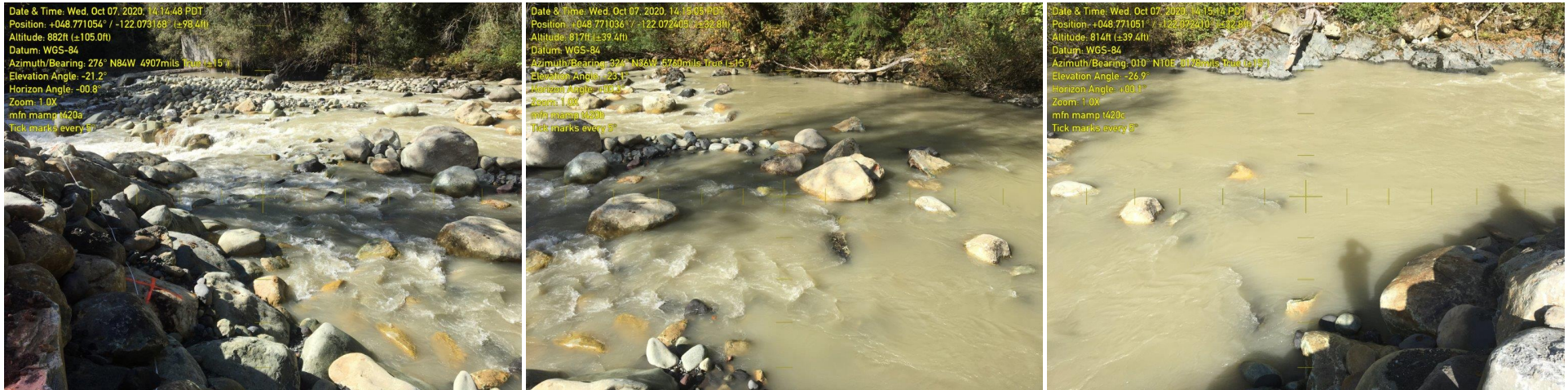




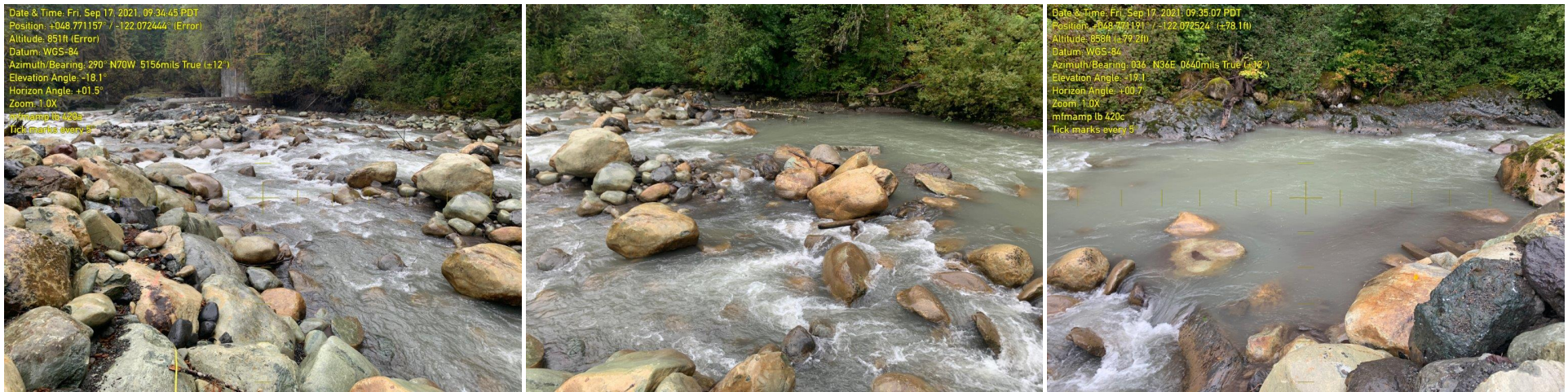


Transect 420

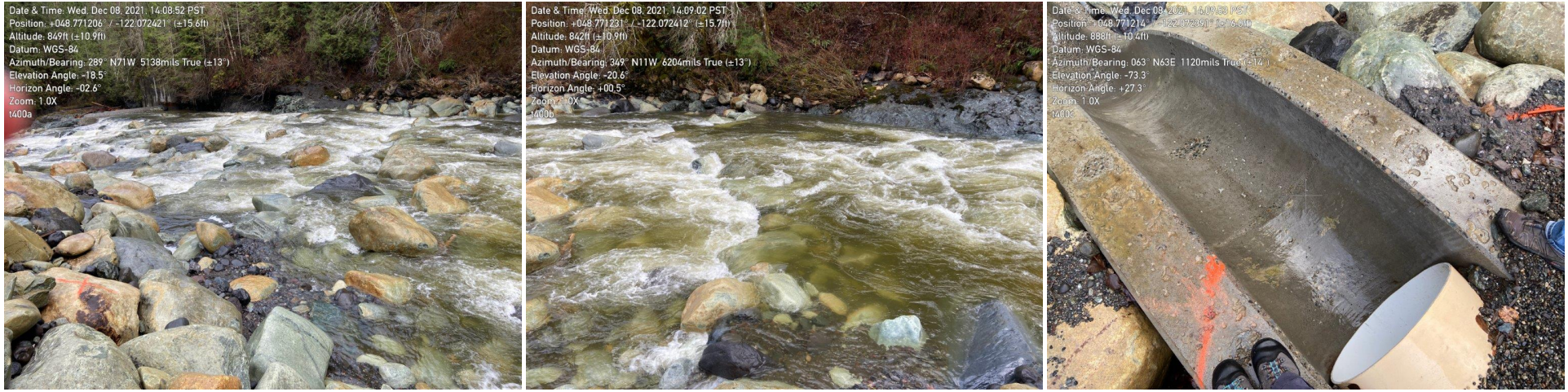
October 2020



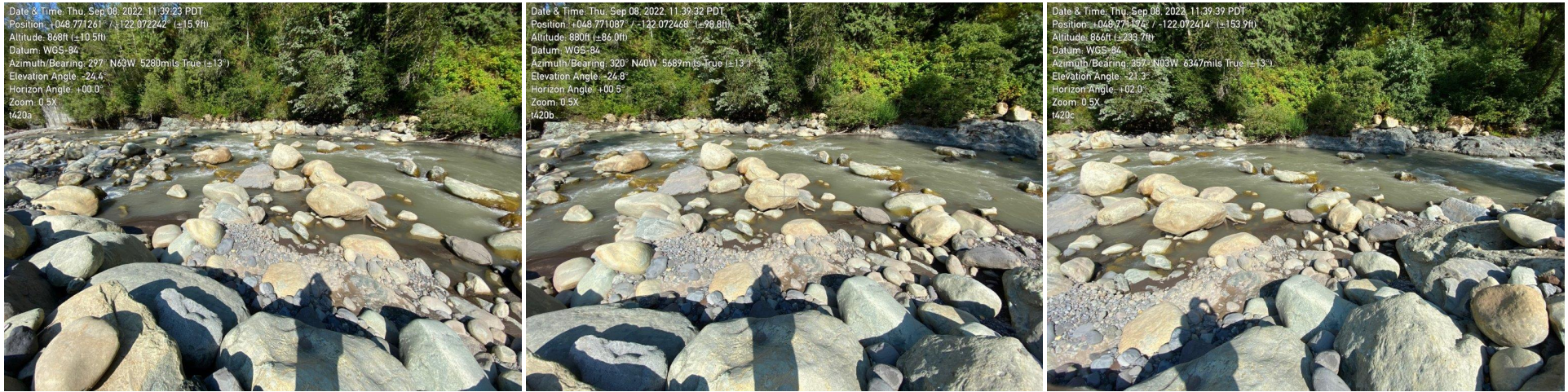
September 2021



December 2021

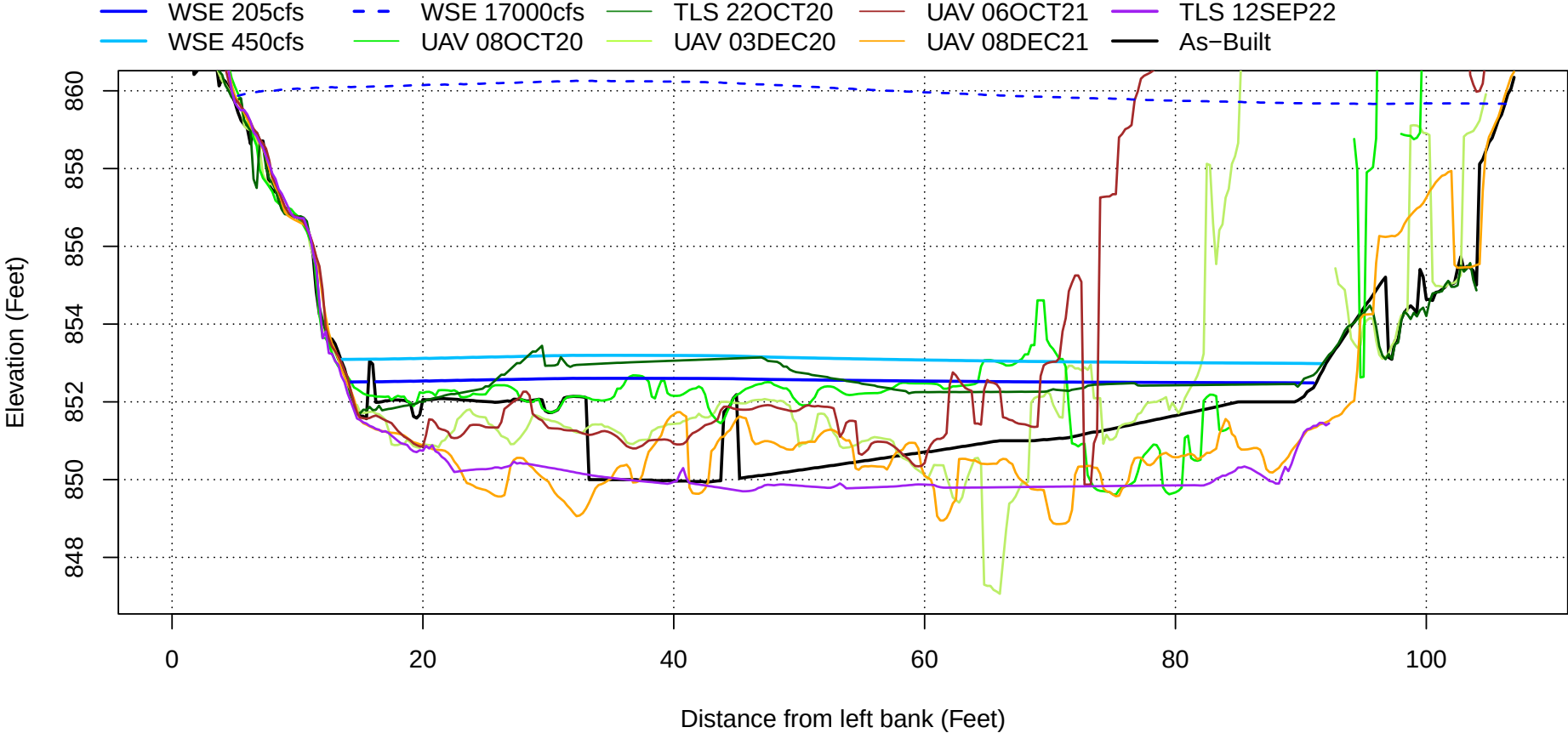


September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker







Transect 437

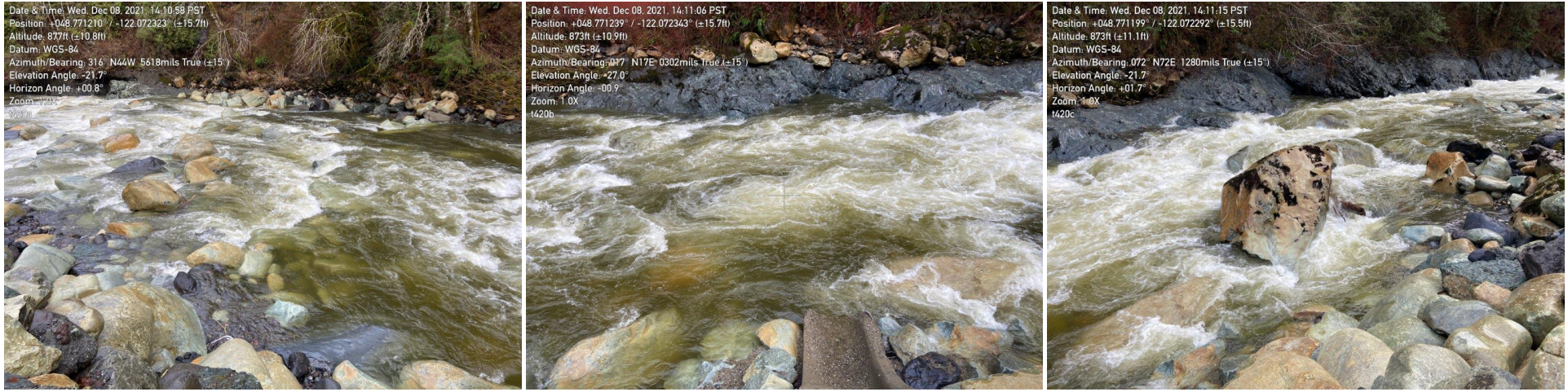
October 2020



September 2021



December 2021

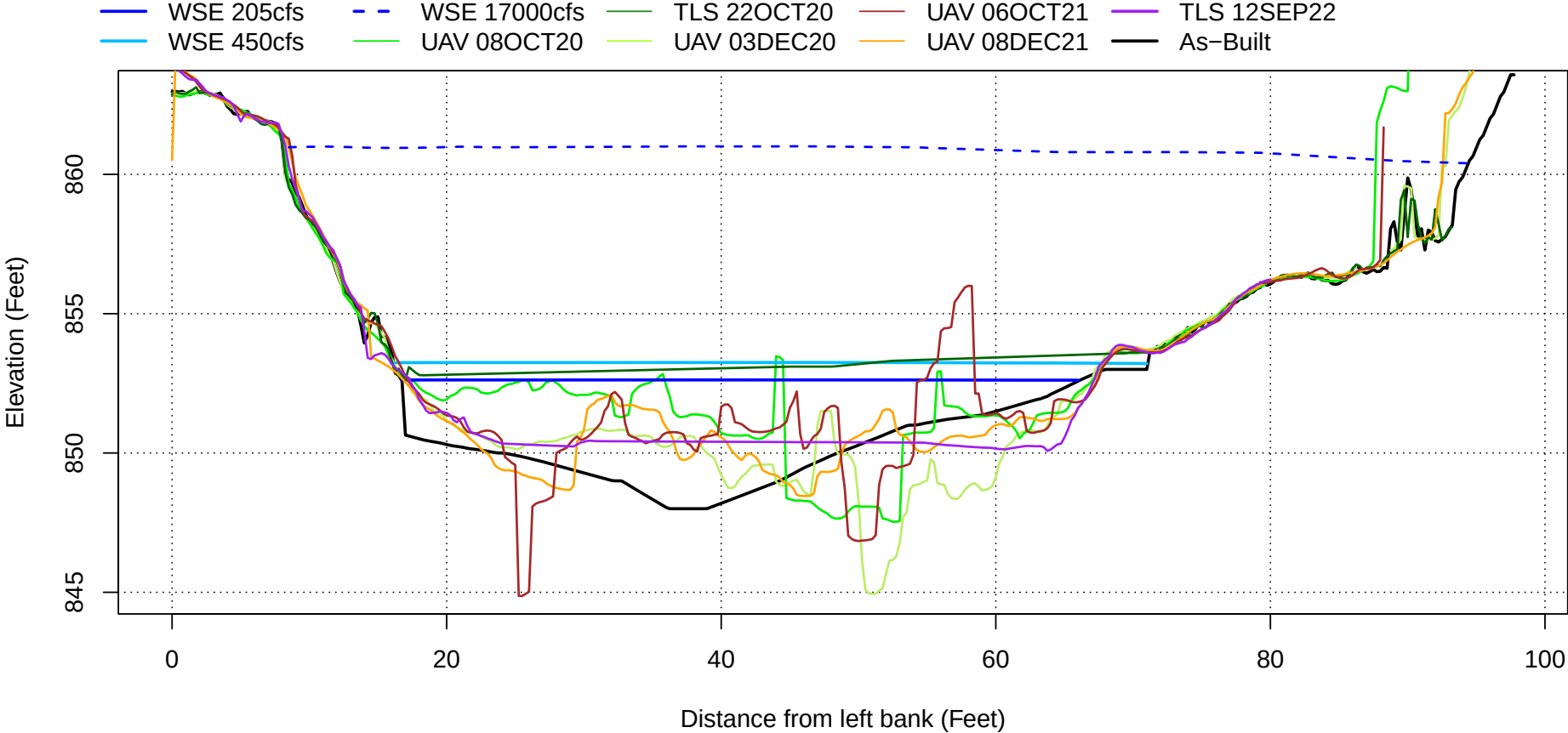


September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker







Transect 460

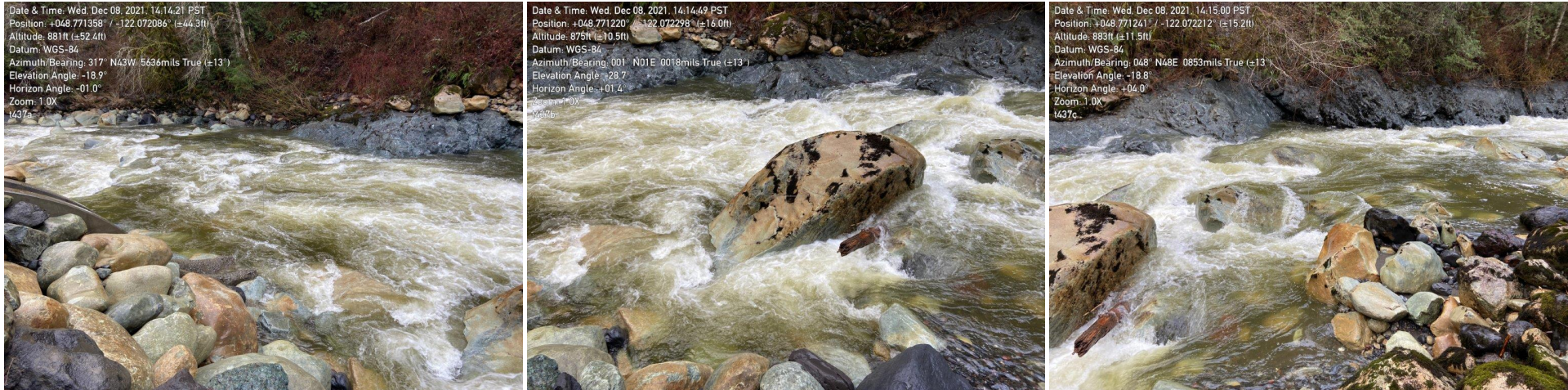
October 2020



September 2021



December 2021

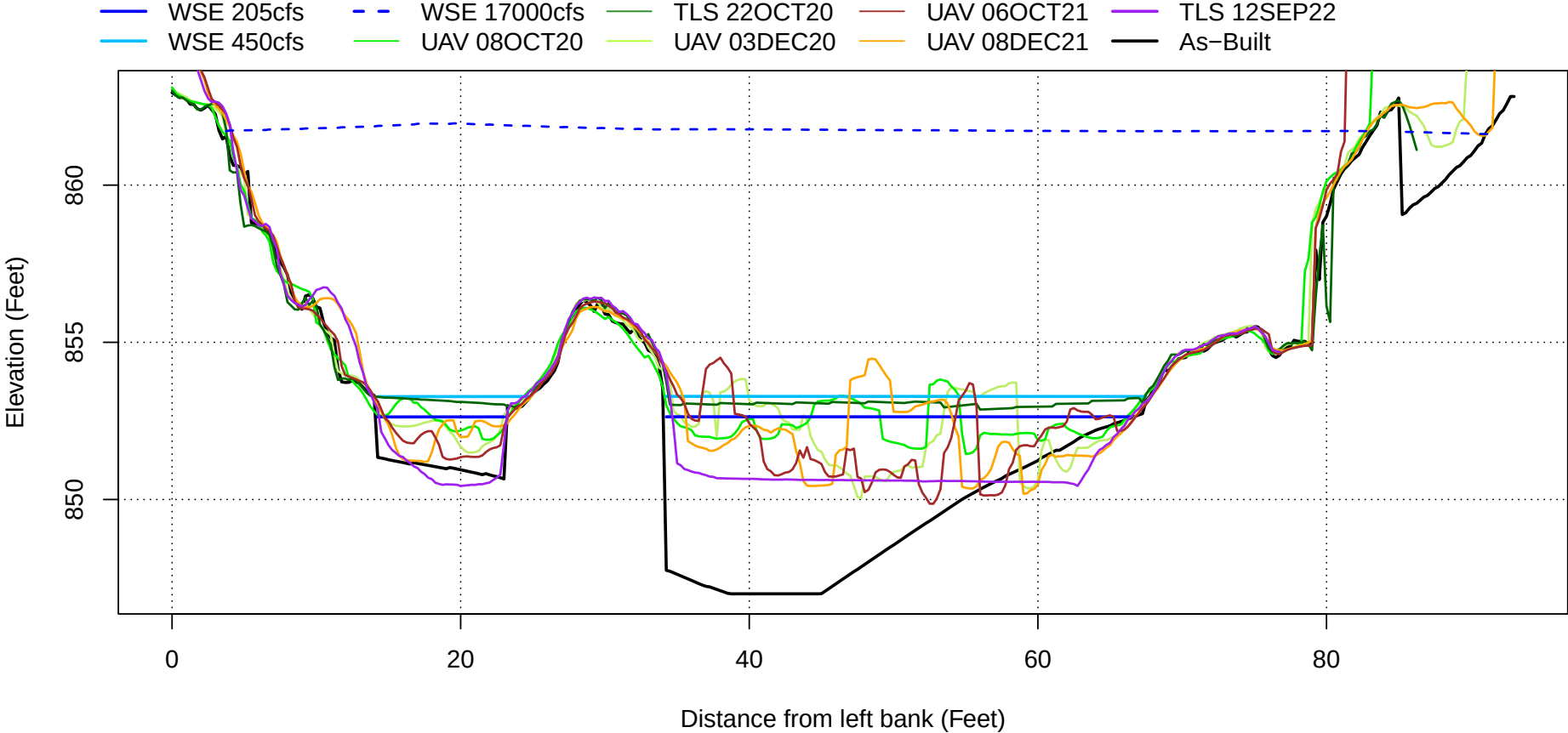


September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker





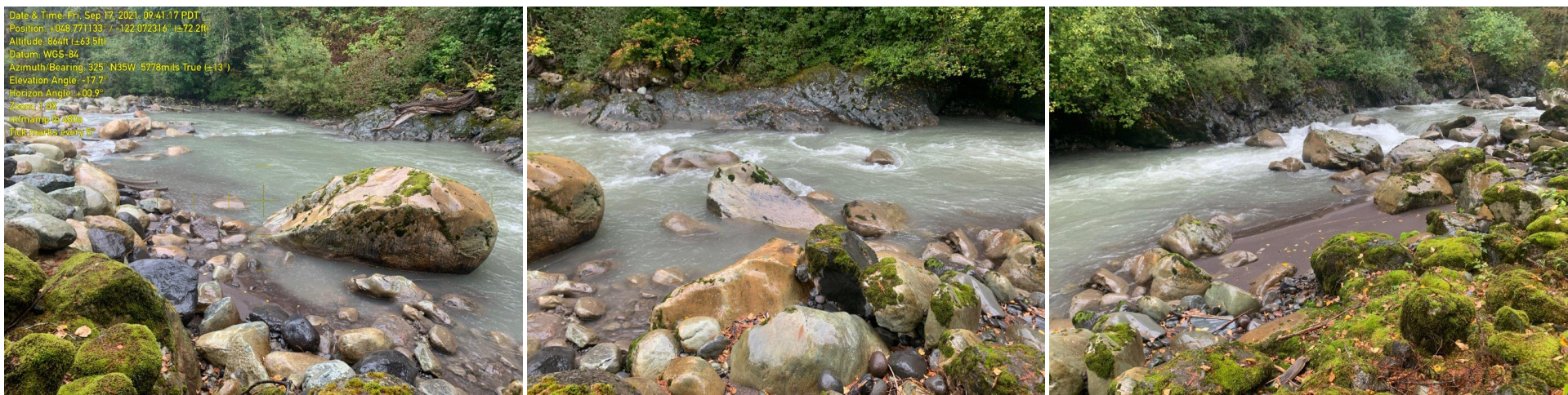


Transect 480

October 2020



September 2021



December 2021

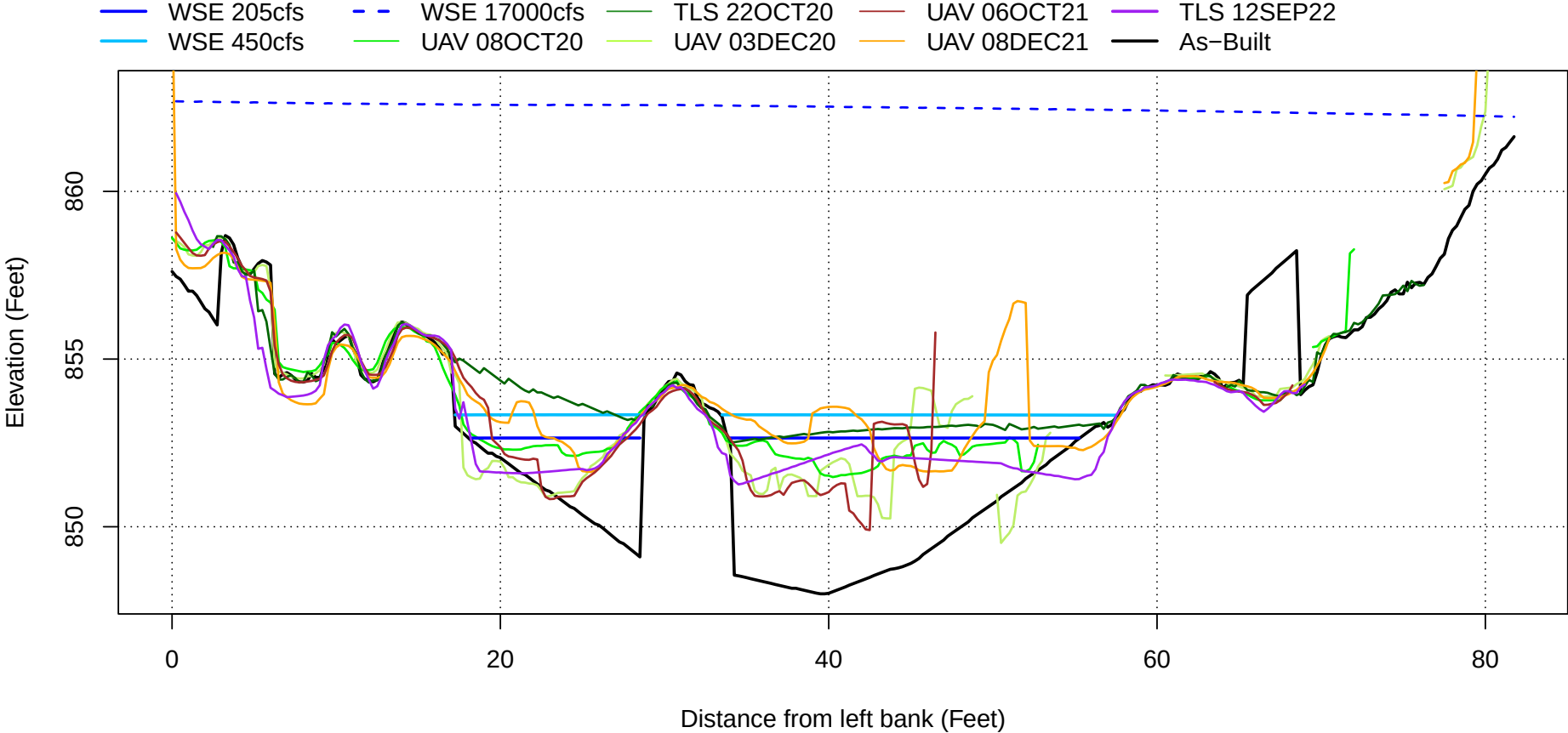


September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker





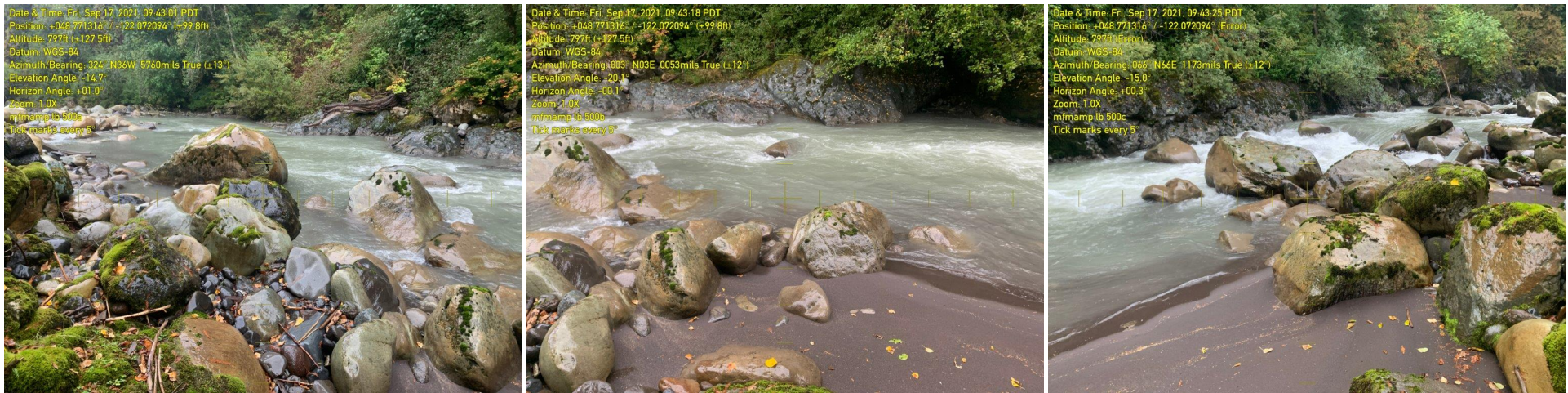


Transect 500

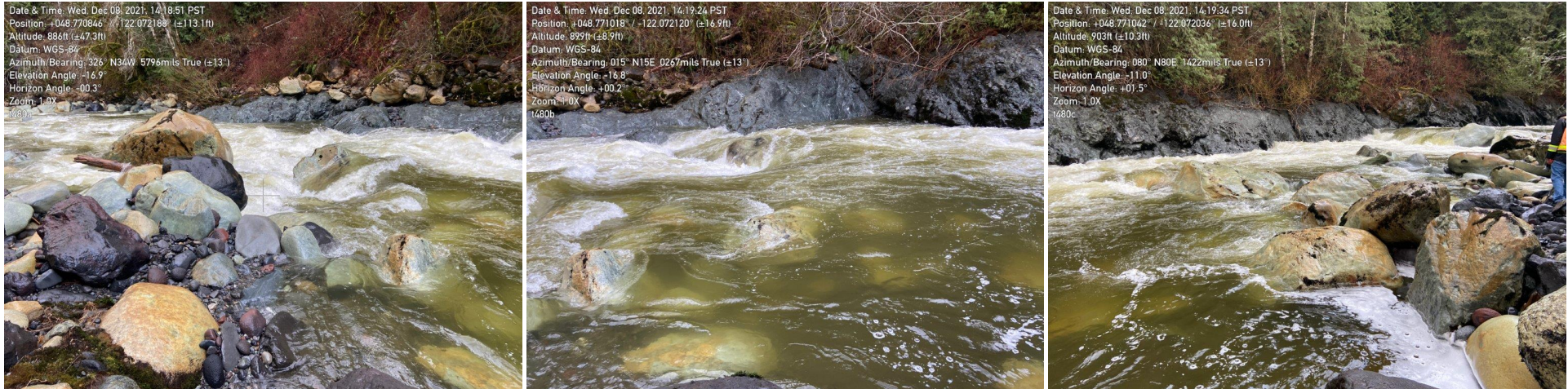
October 2020



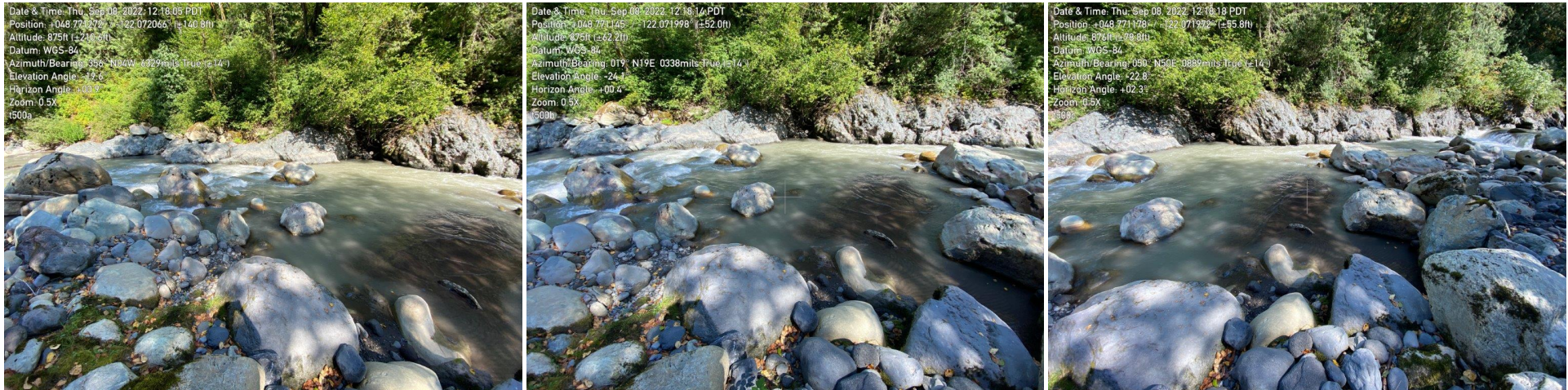
September 2021



December 2021

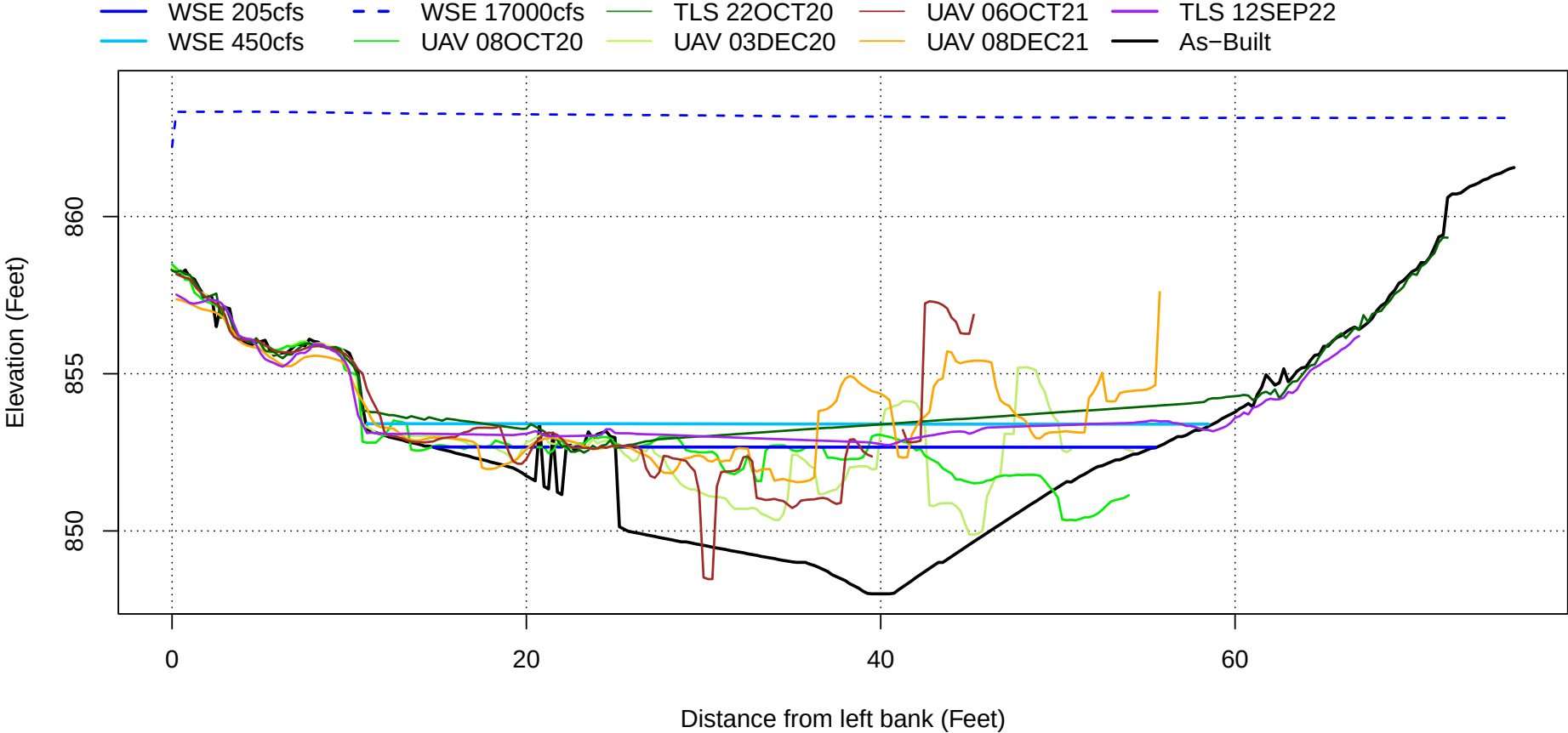


September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker





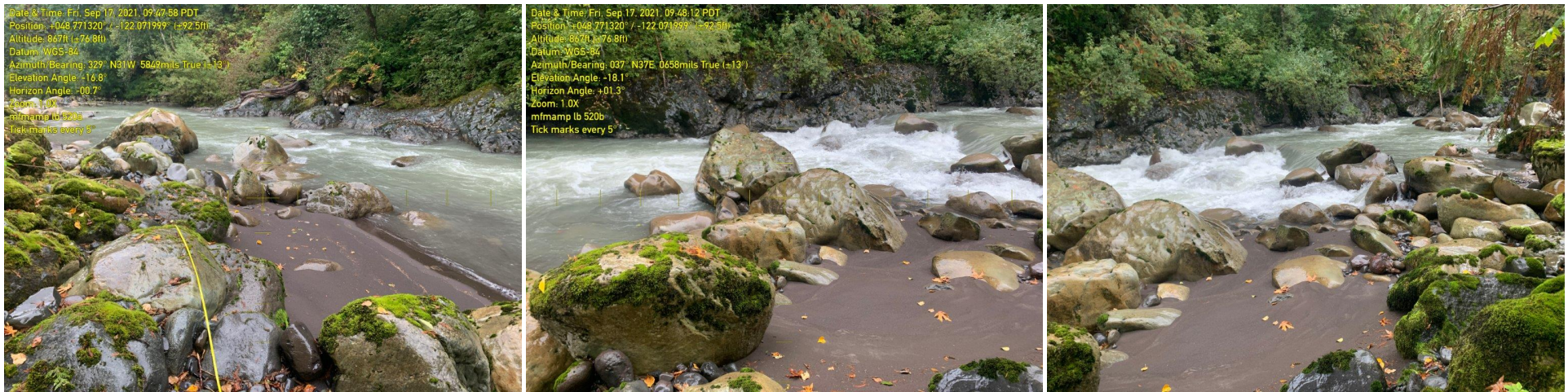


Transect 520

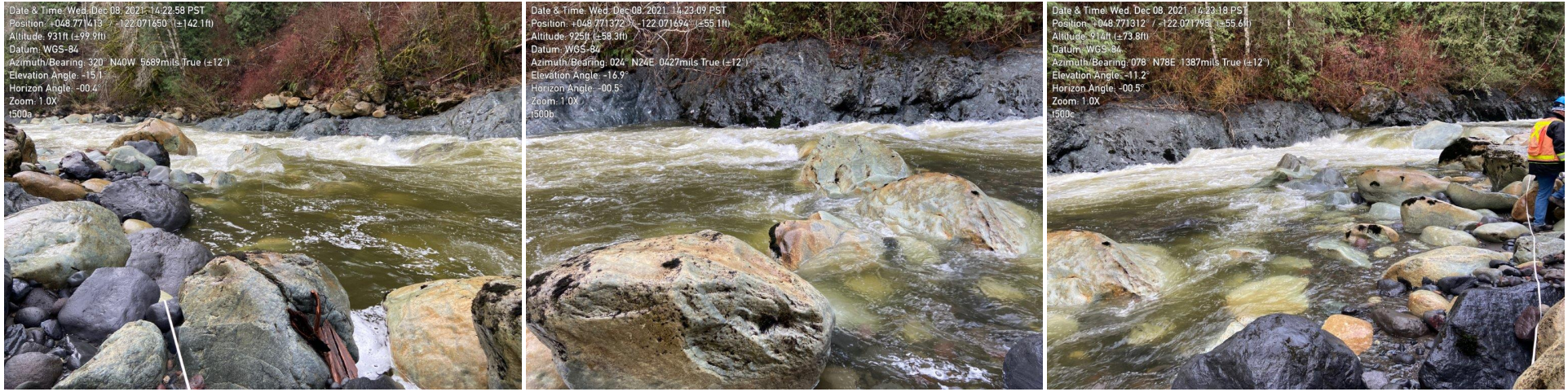
October 2020



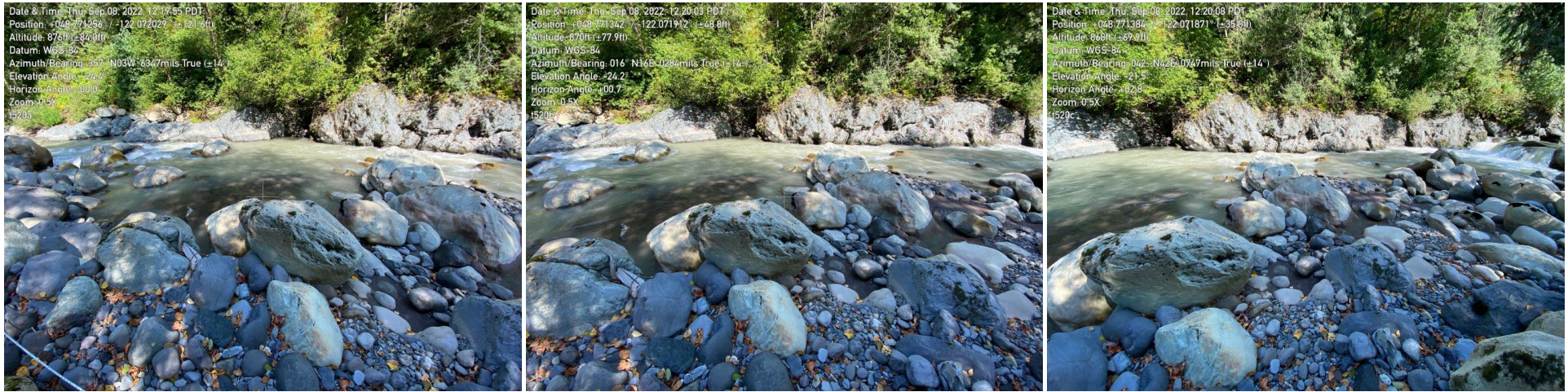
September 2021



December 2021

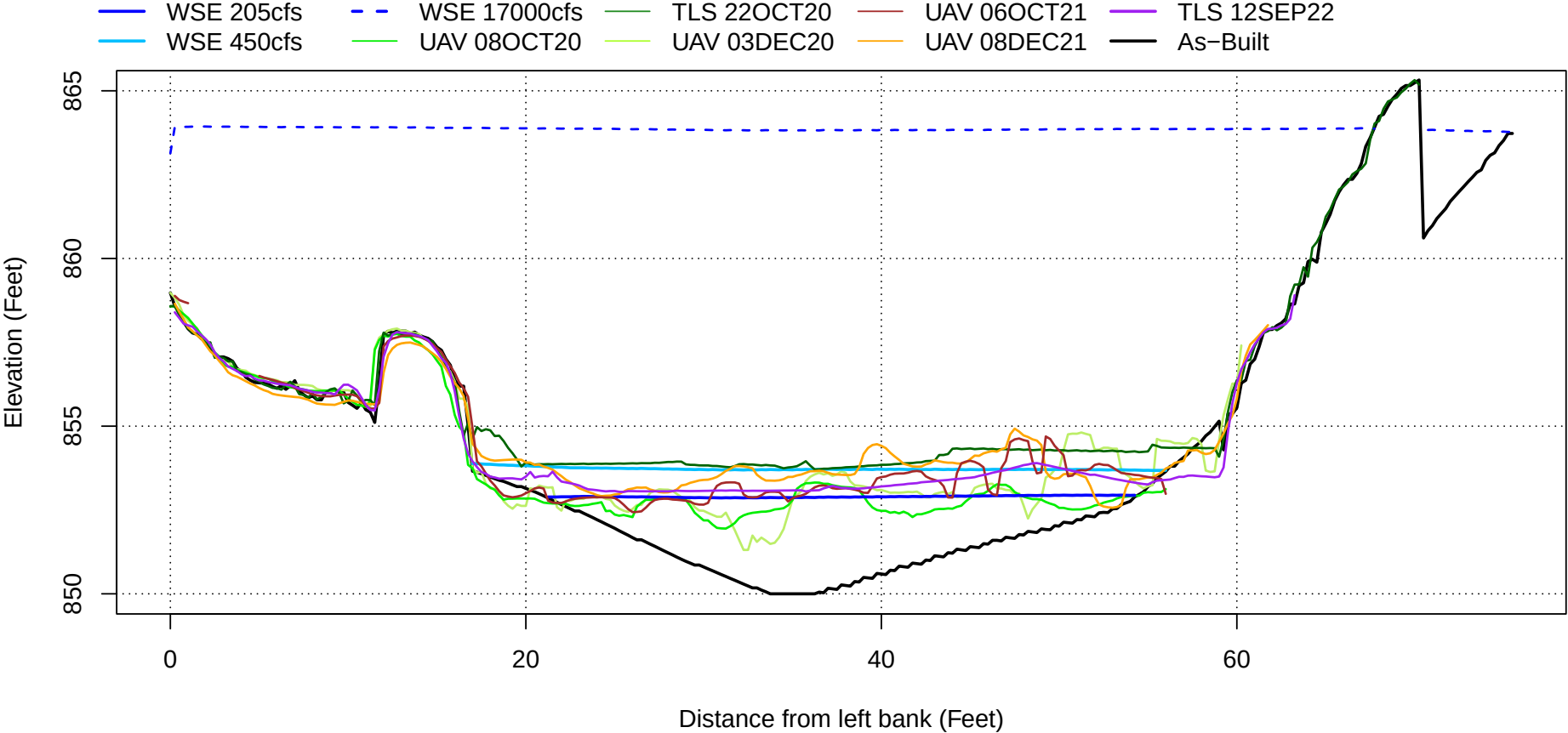


September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker

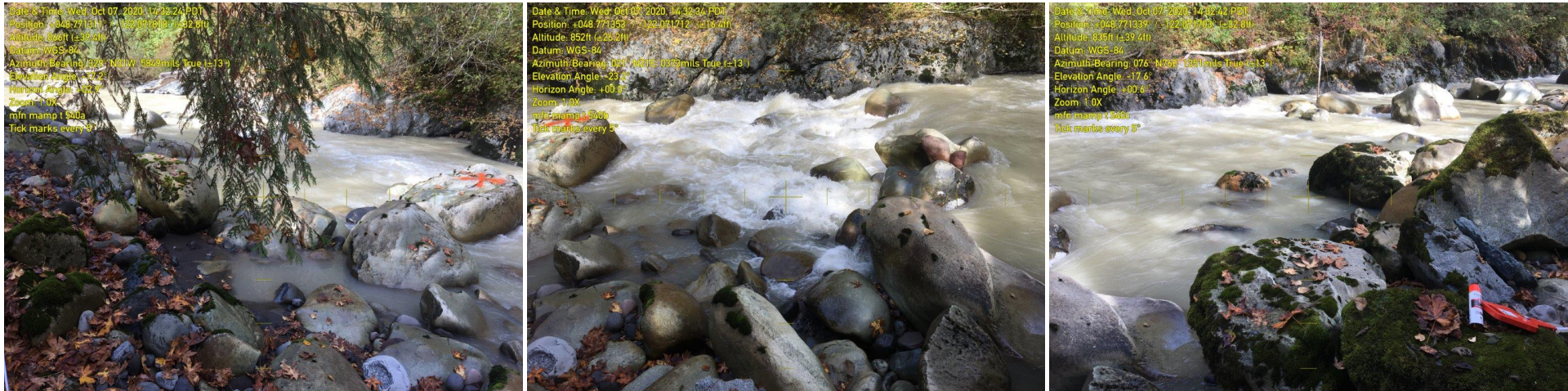






Transect 540

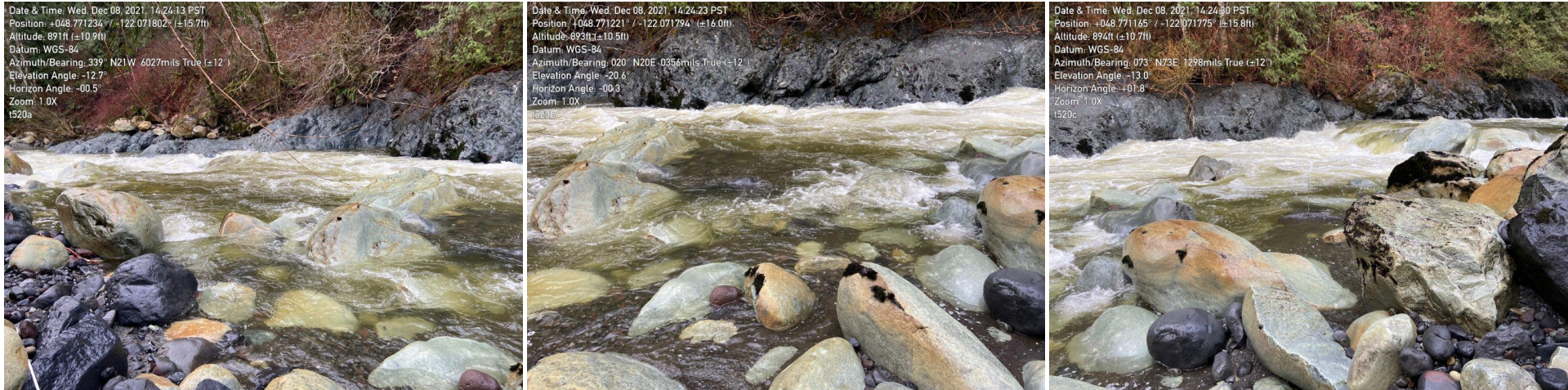
October 2020



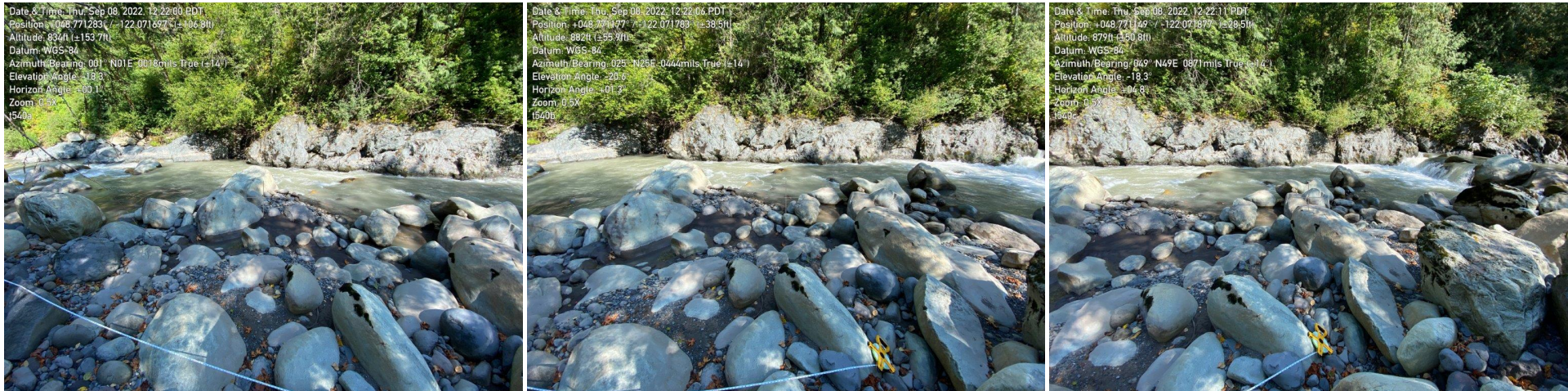
September 2021



December 2021

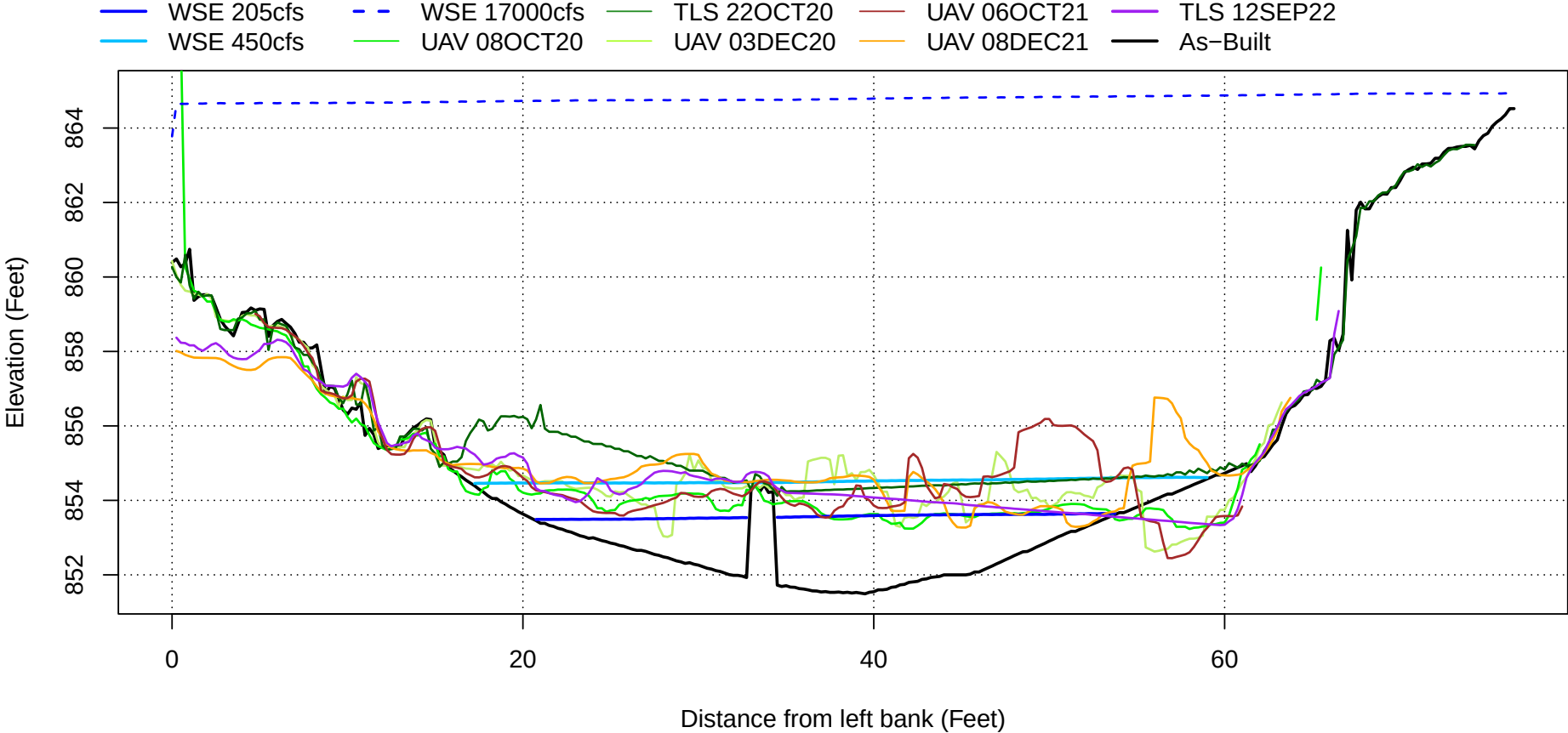


September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker

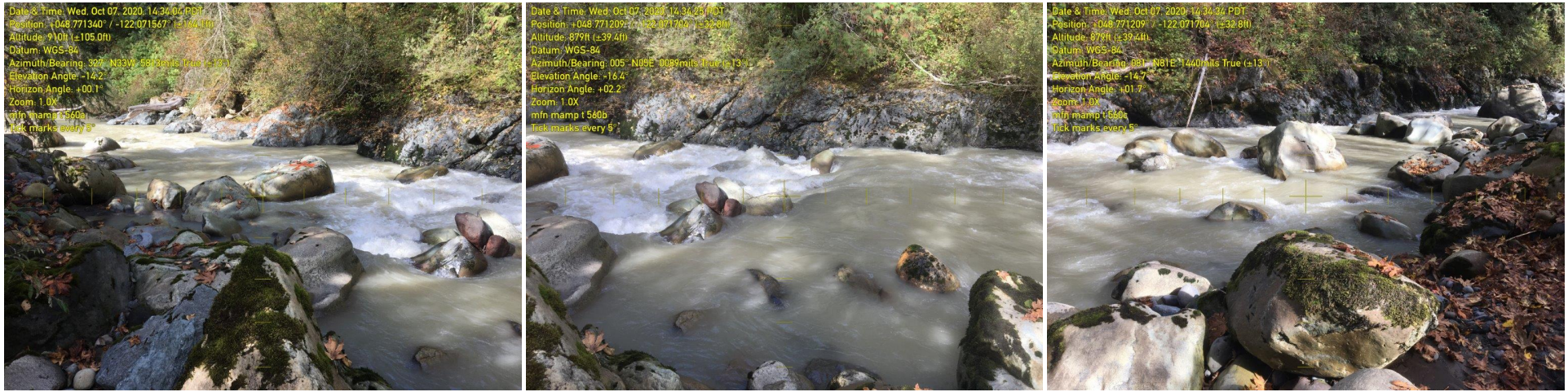






Transect 560

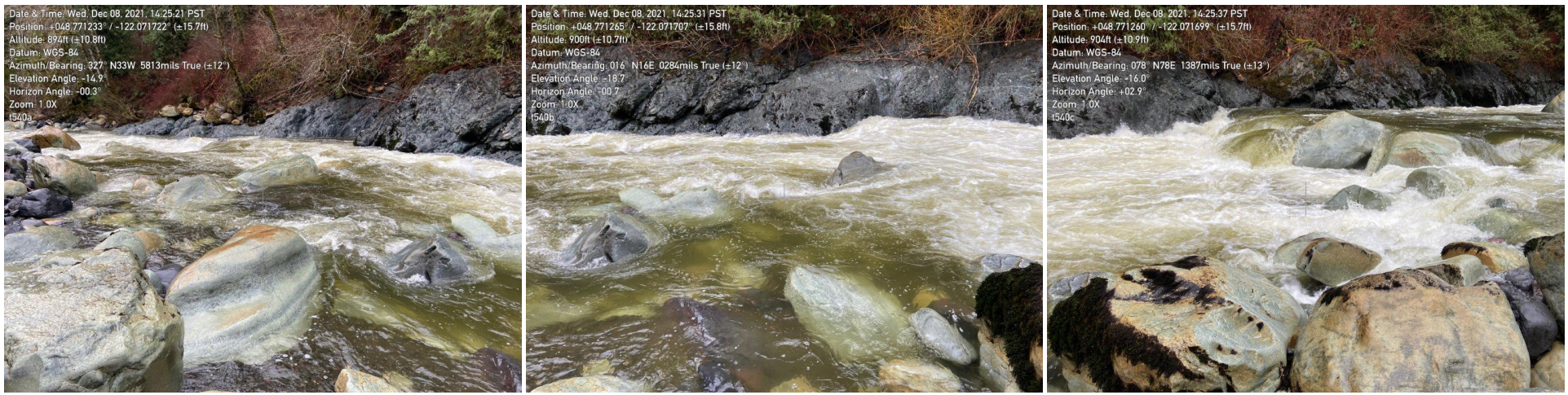
October 2020



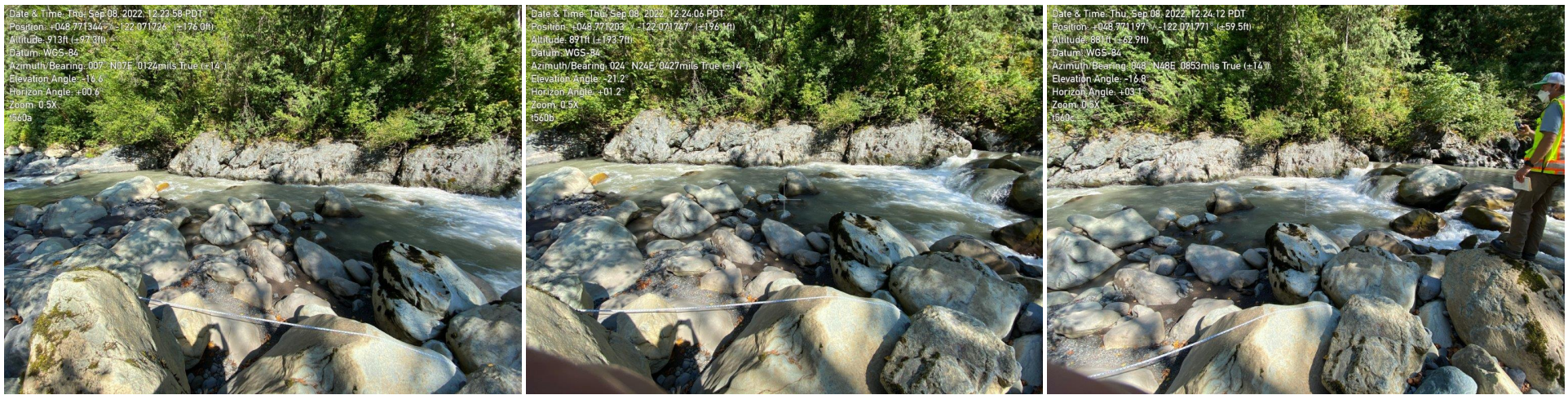
September 2021



December 2021

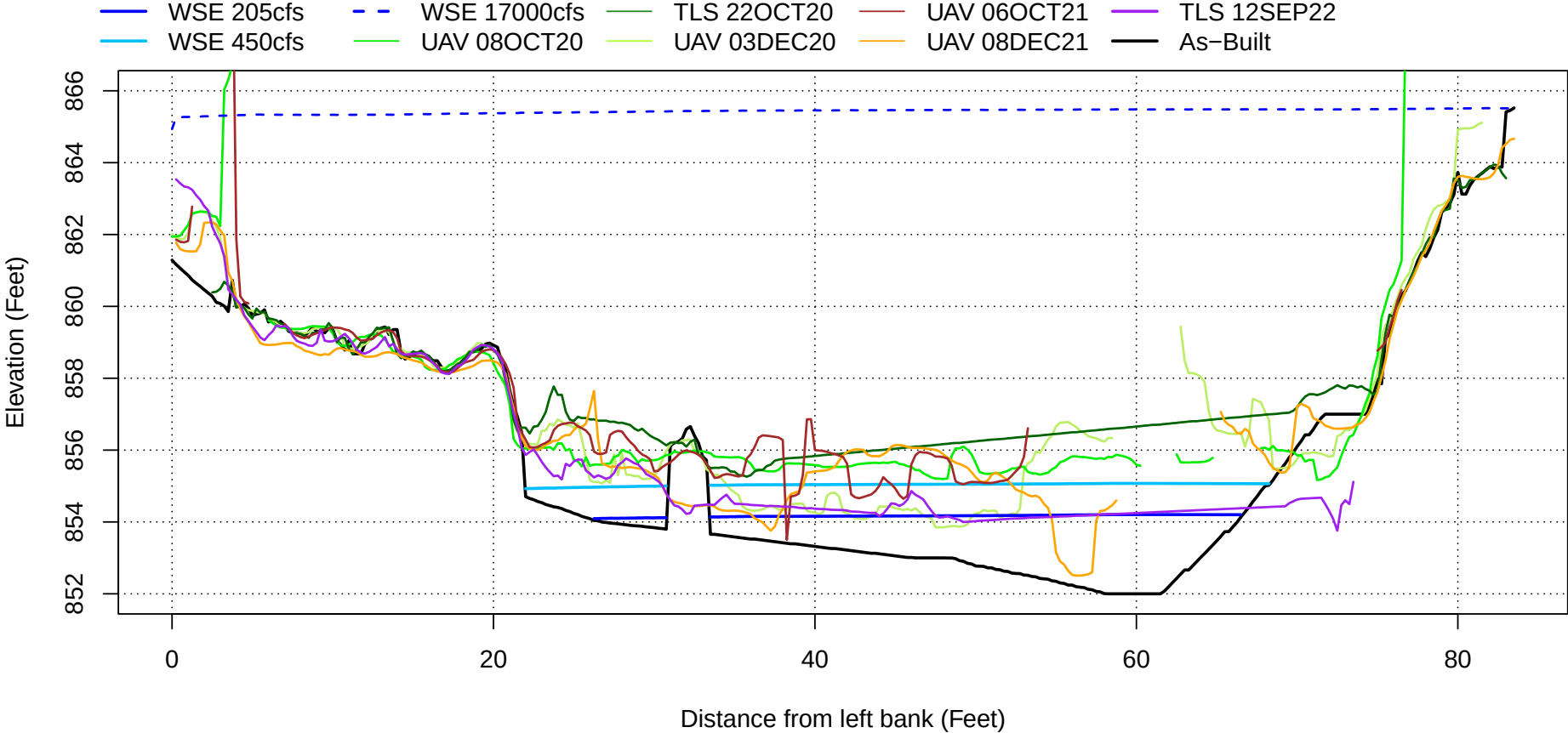


September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker

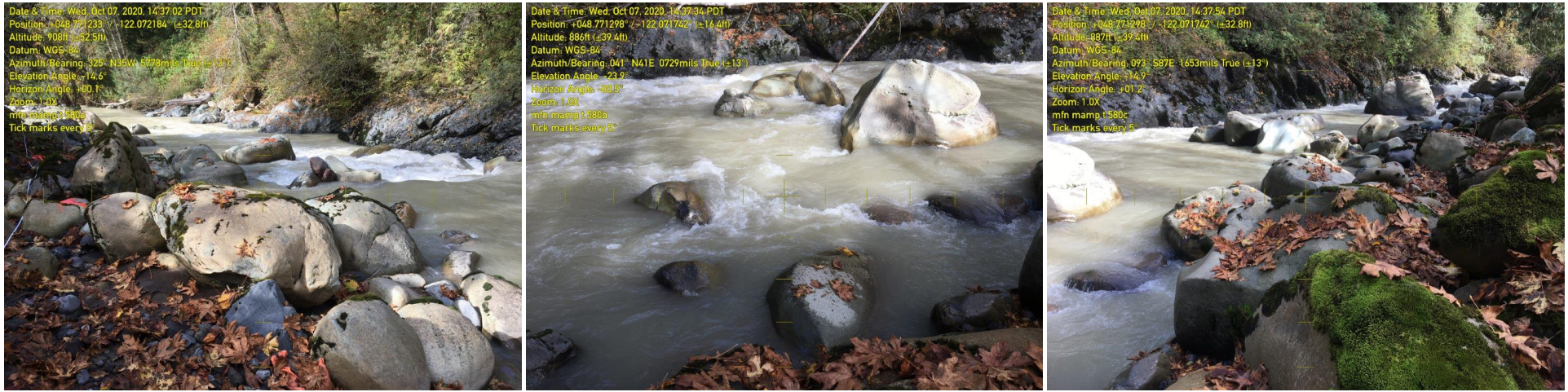






Transect 580

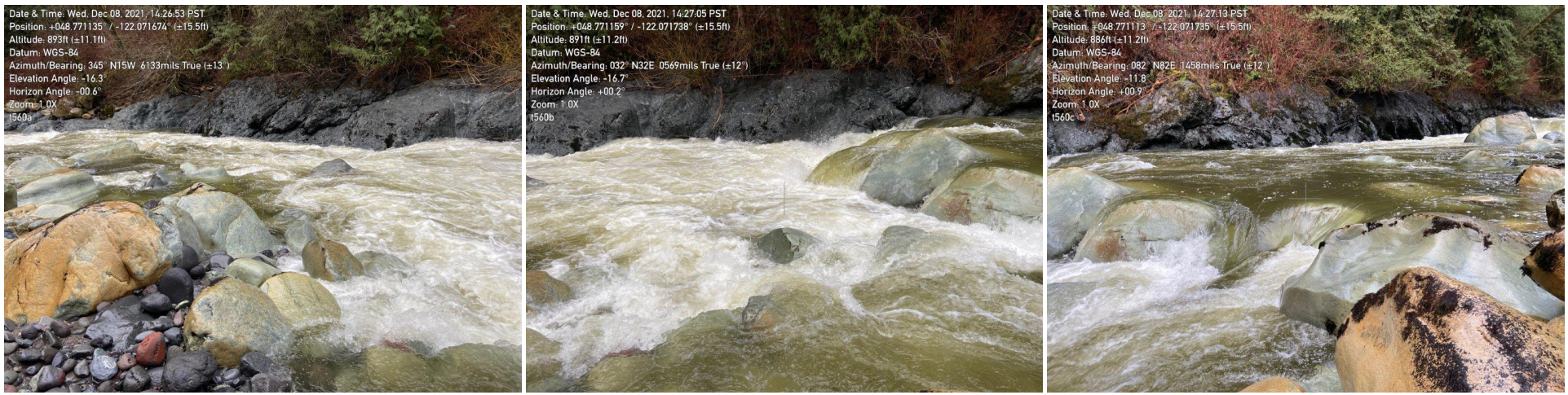
October 2020



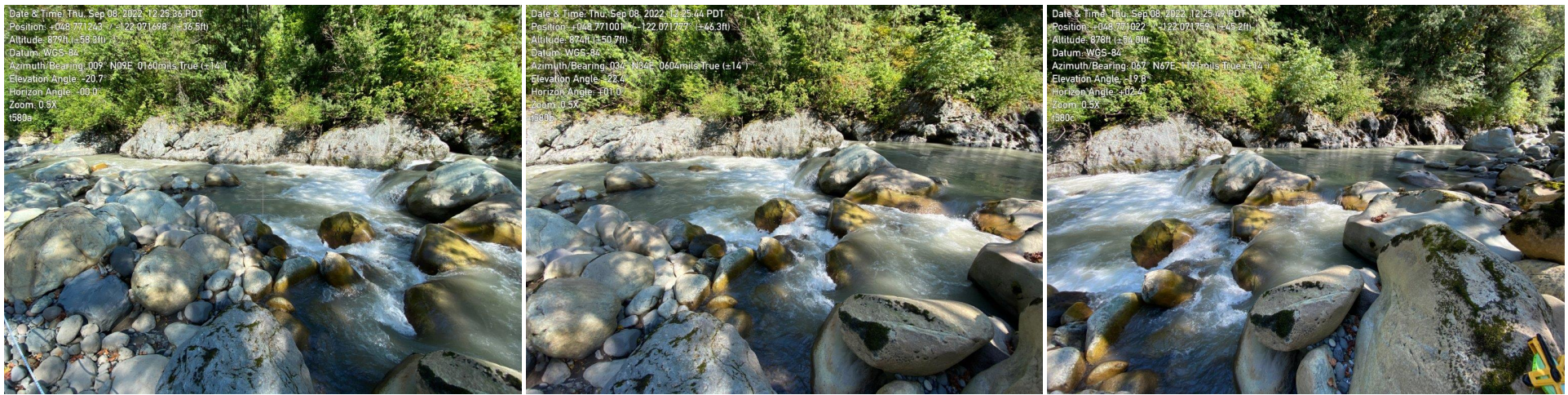
September 2021



December 2021

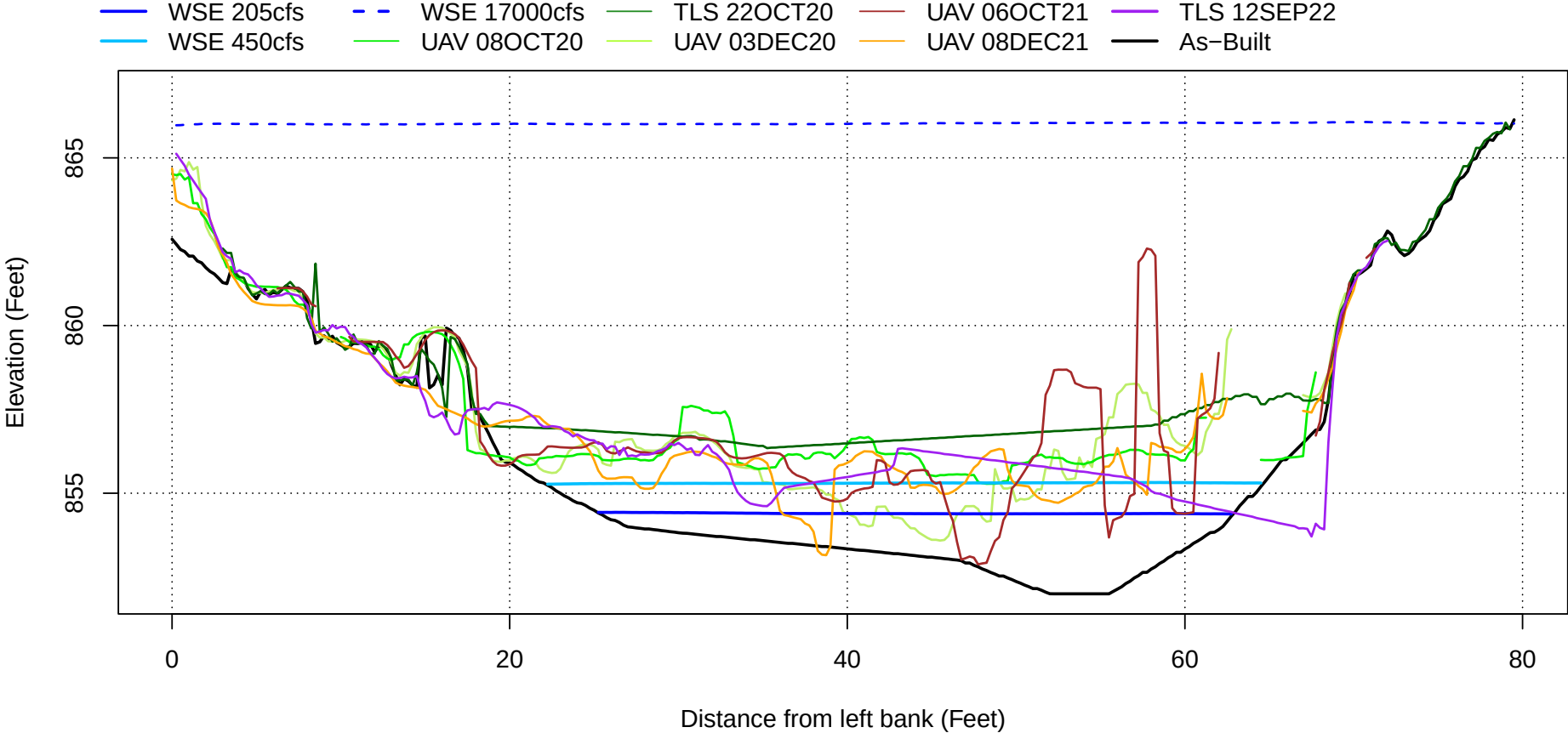


September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker





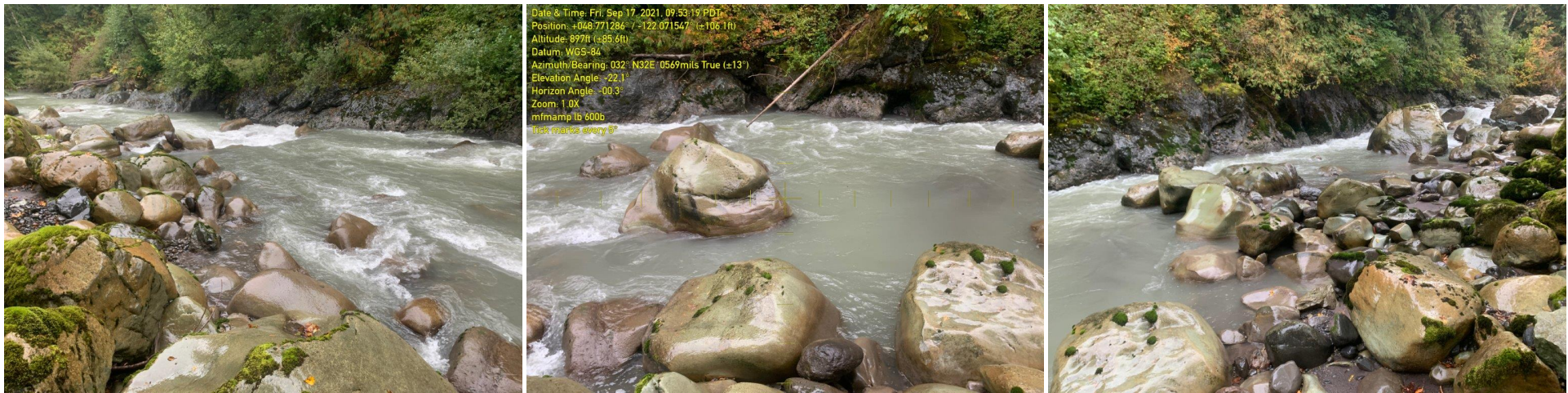


Transect 600

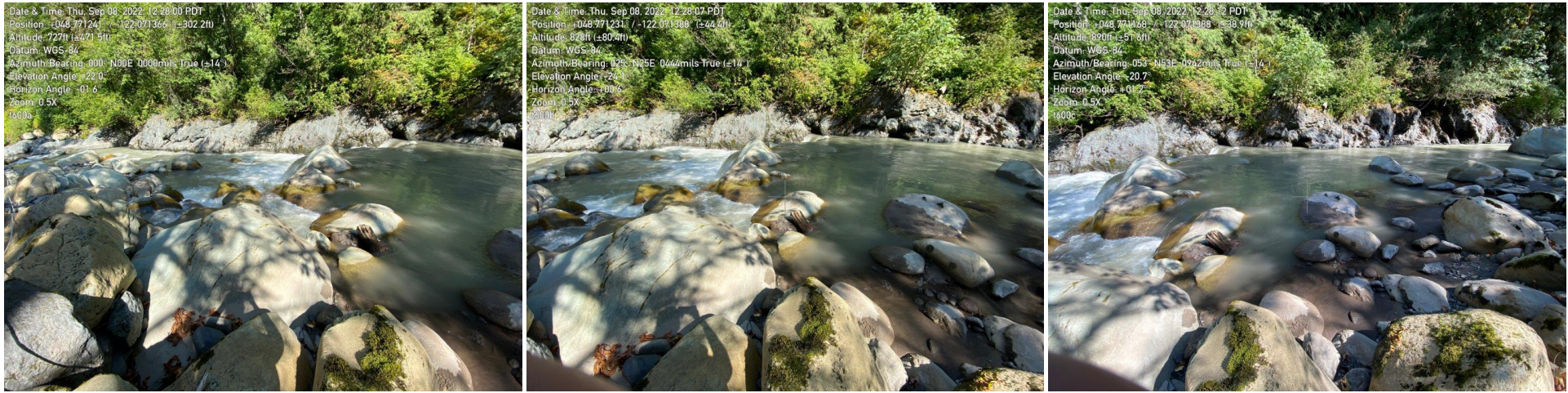
October 2020



September 2021

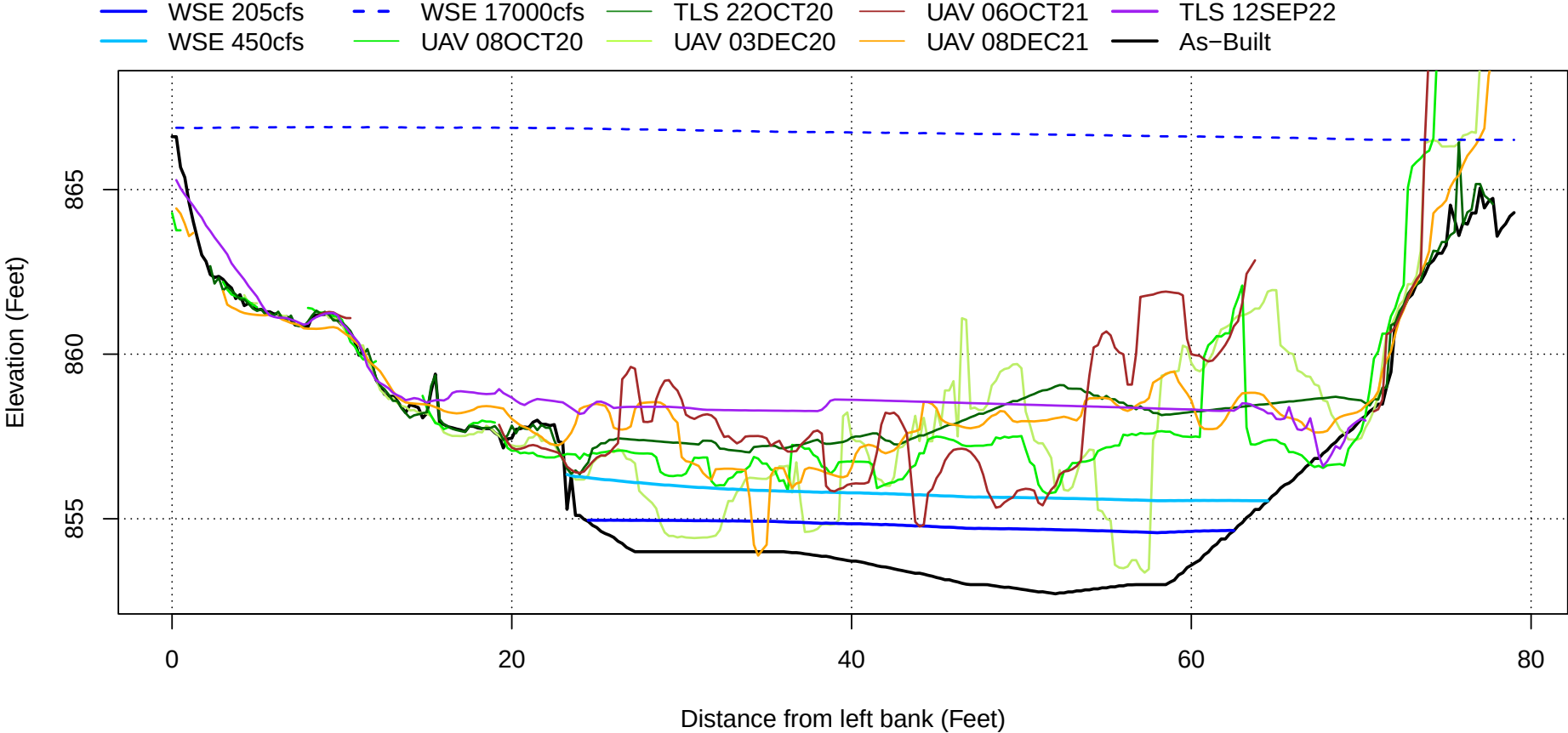


September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker





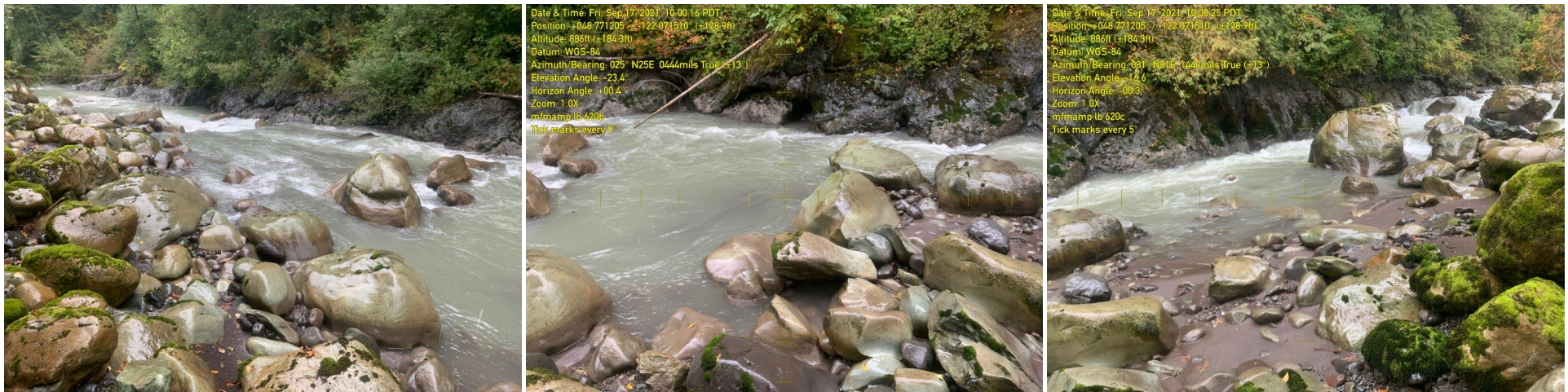


Transect 620

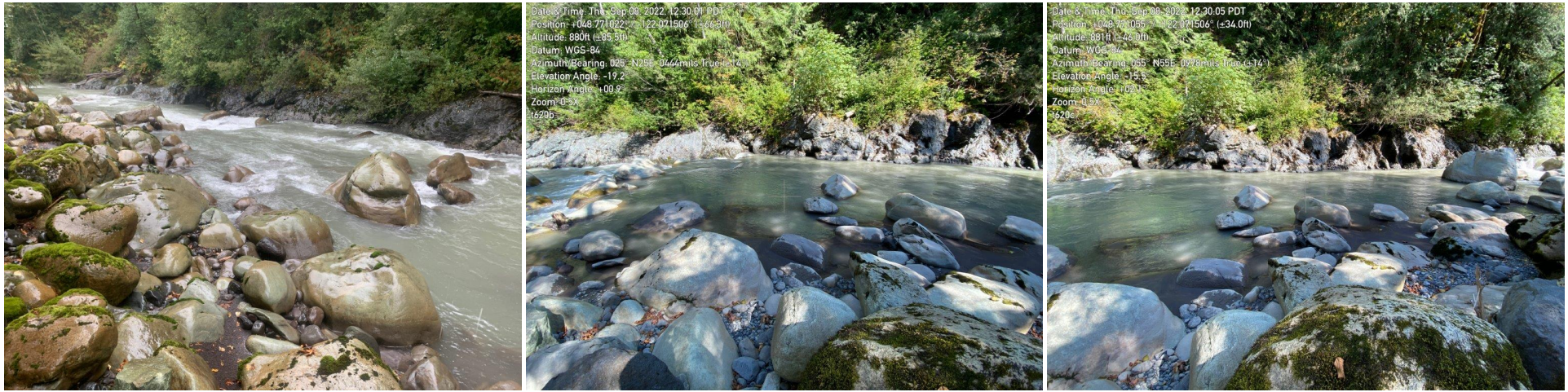
October 2020



September 2021

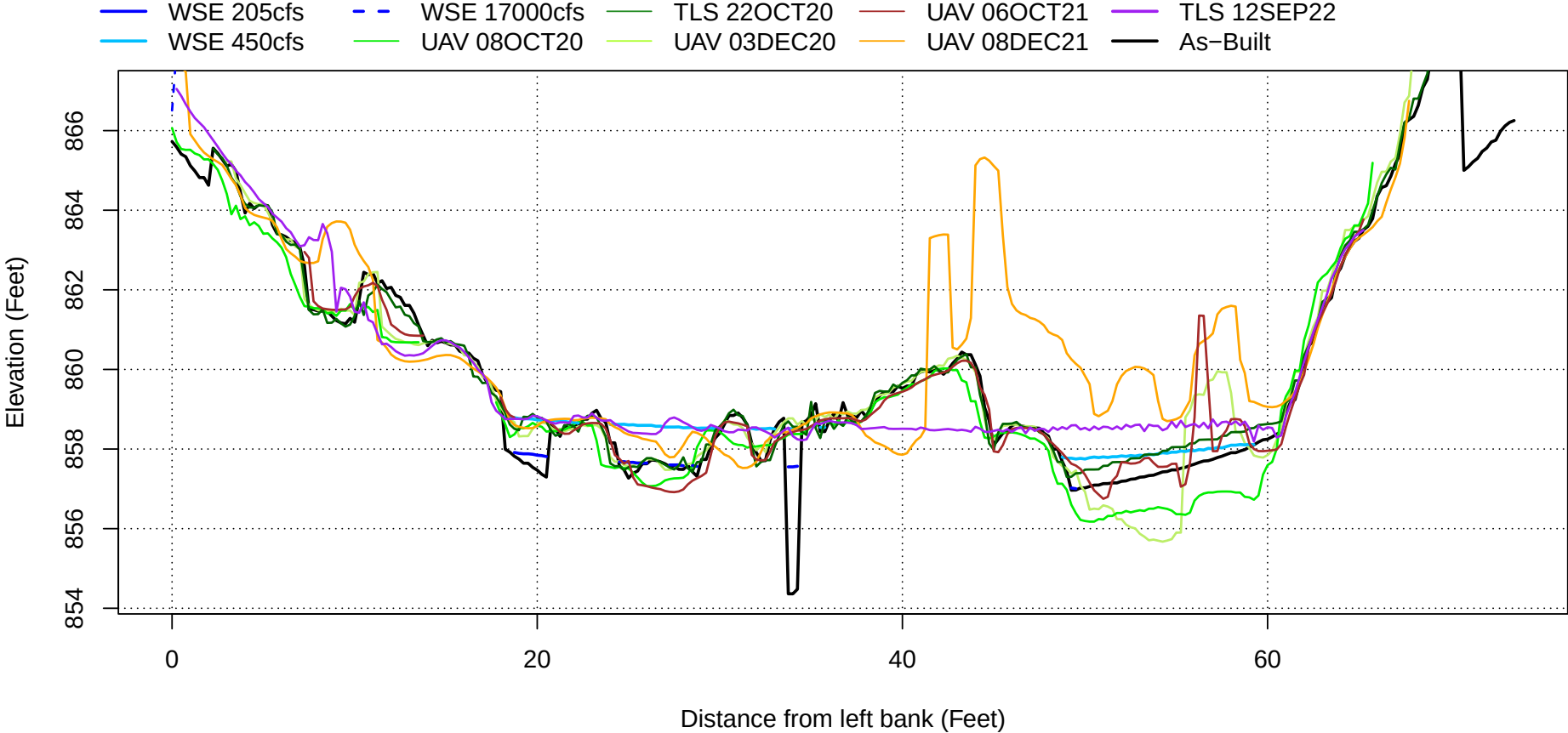


September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker







Transect 640

October 2020



September 2021

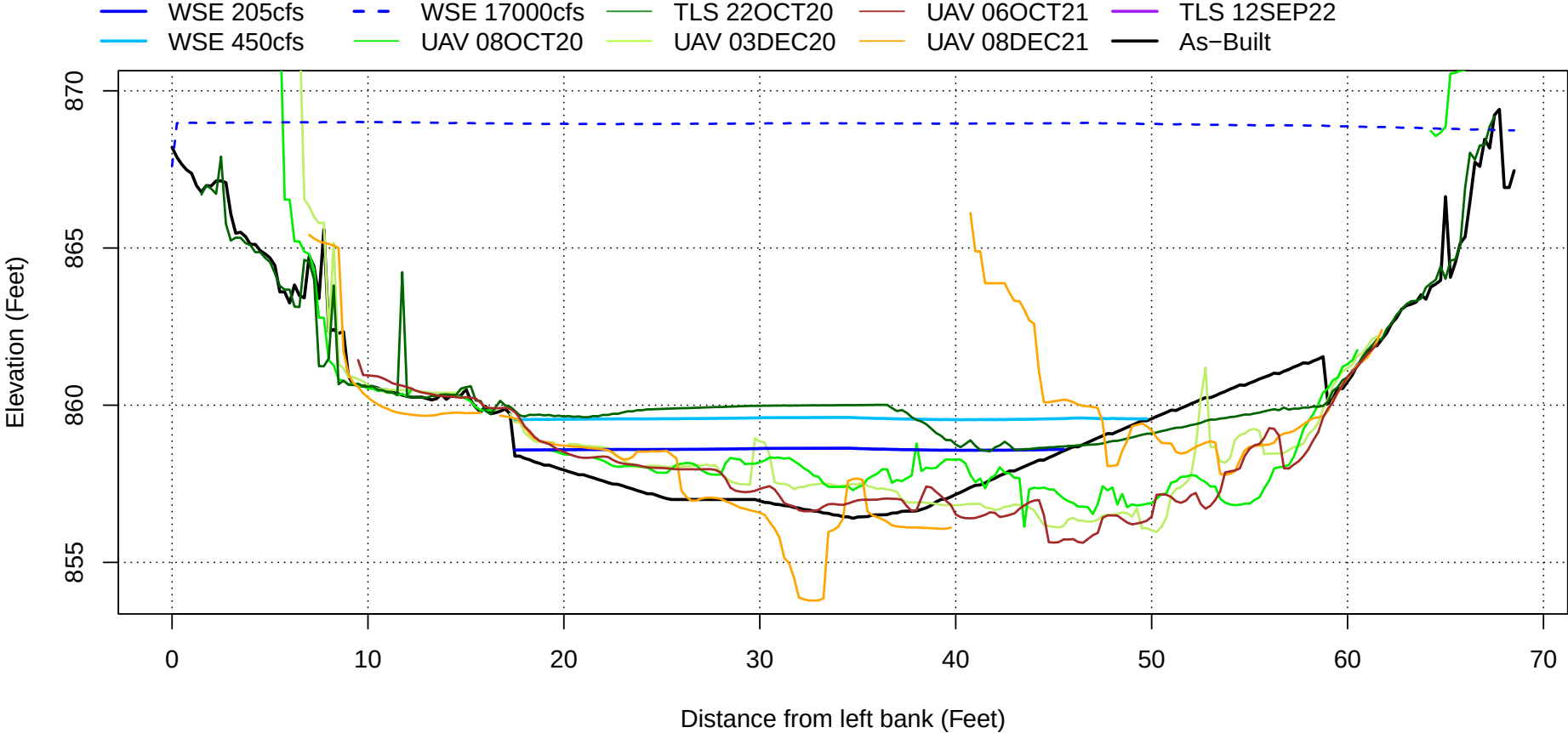


September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker







Transect 663

October 2020



September 2021

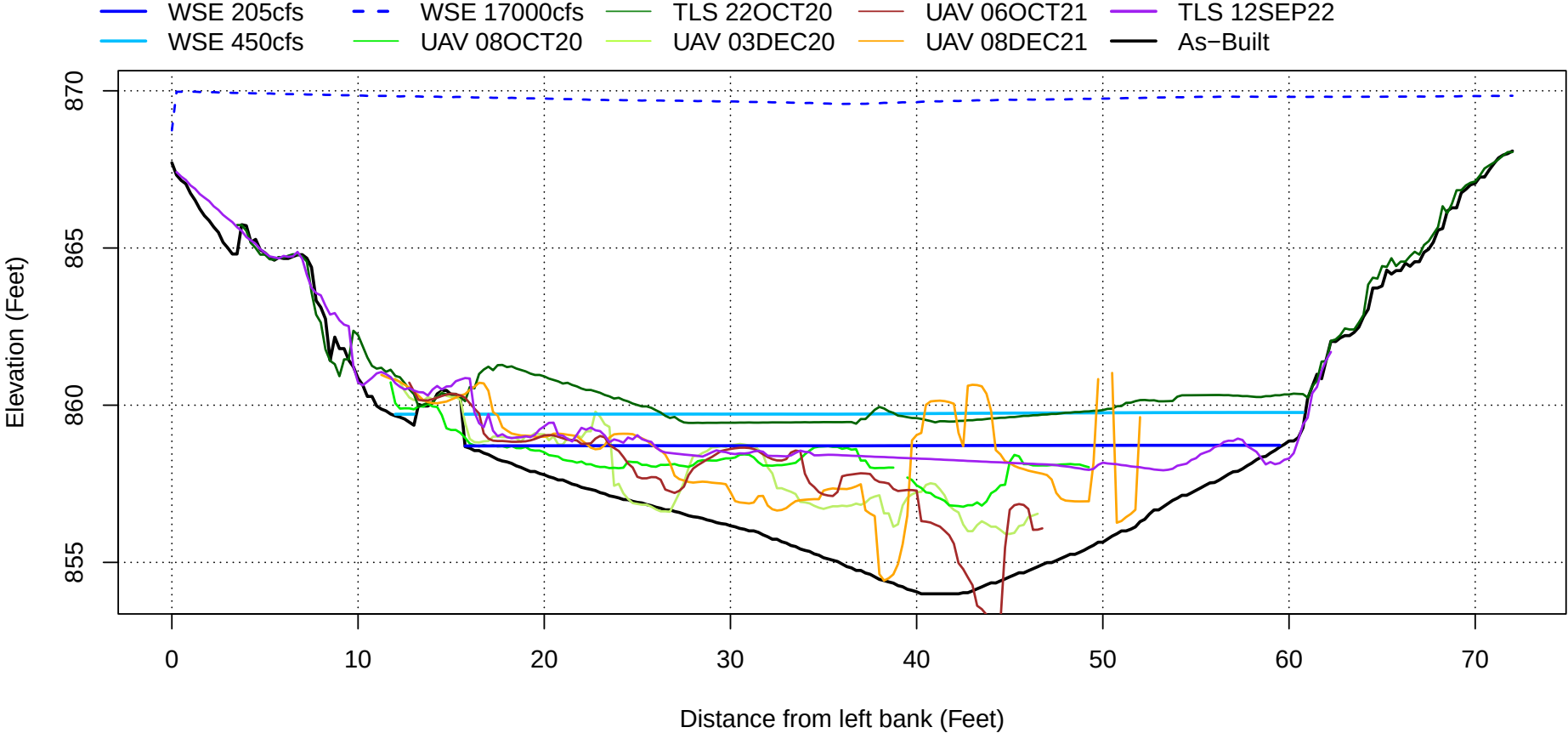


September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker

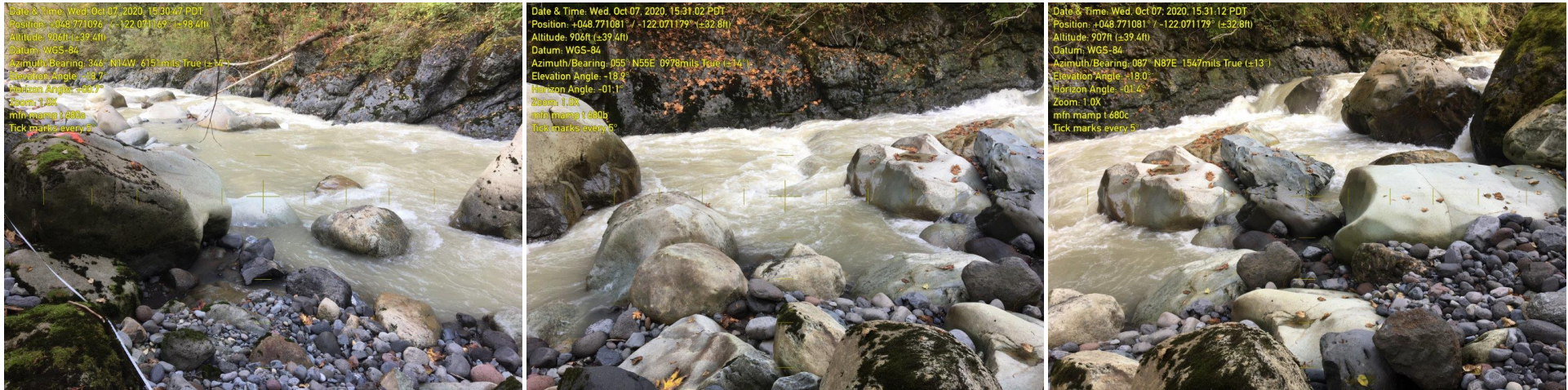






Transect 680

October 2020



September 2021

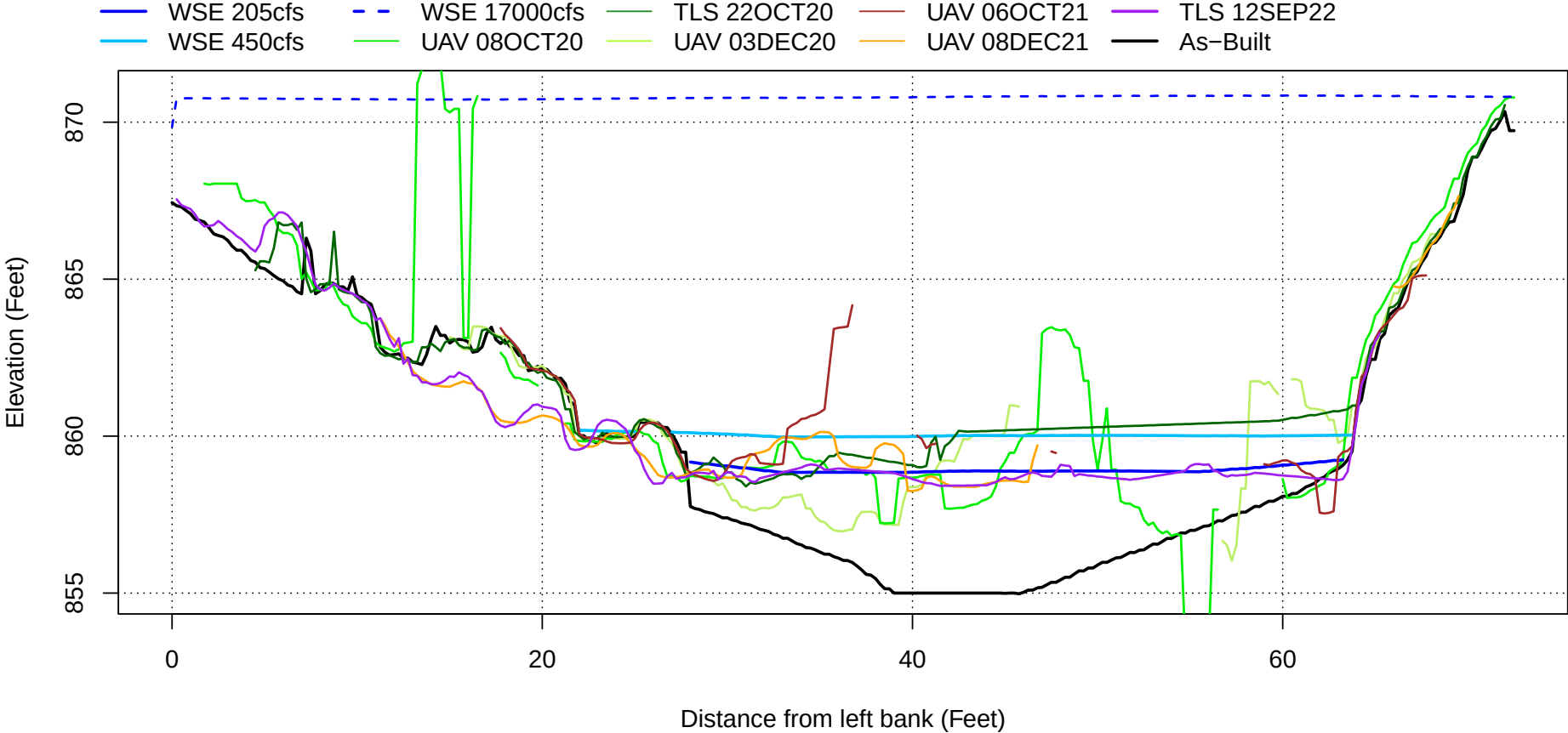


September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker

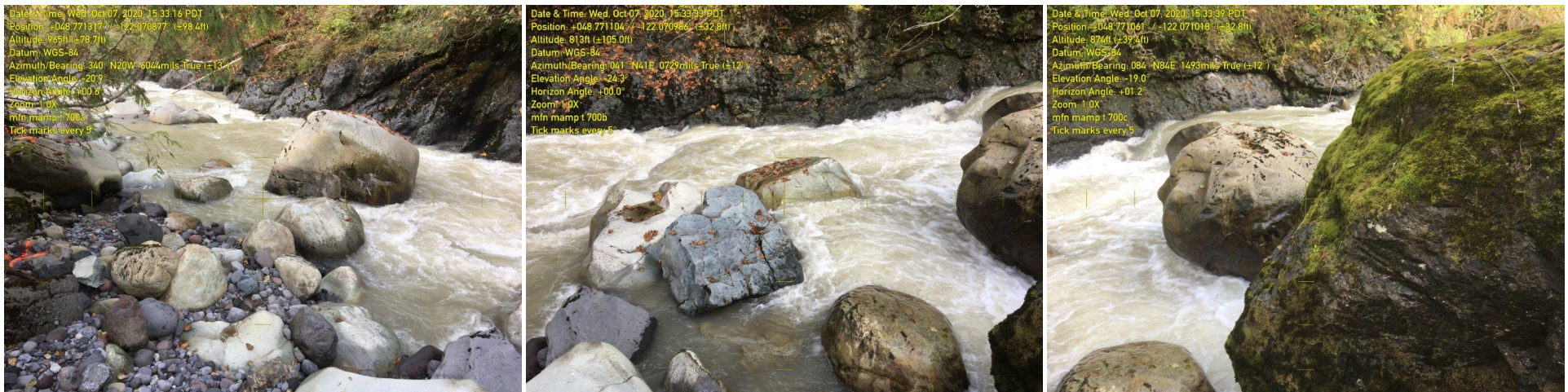




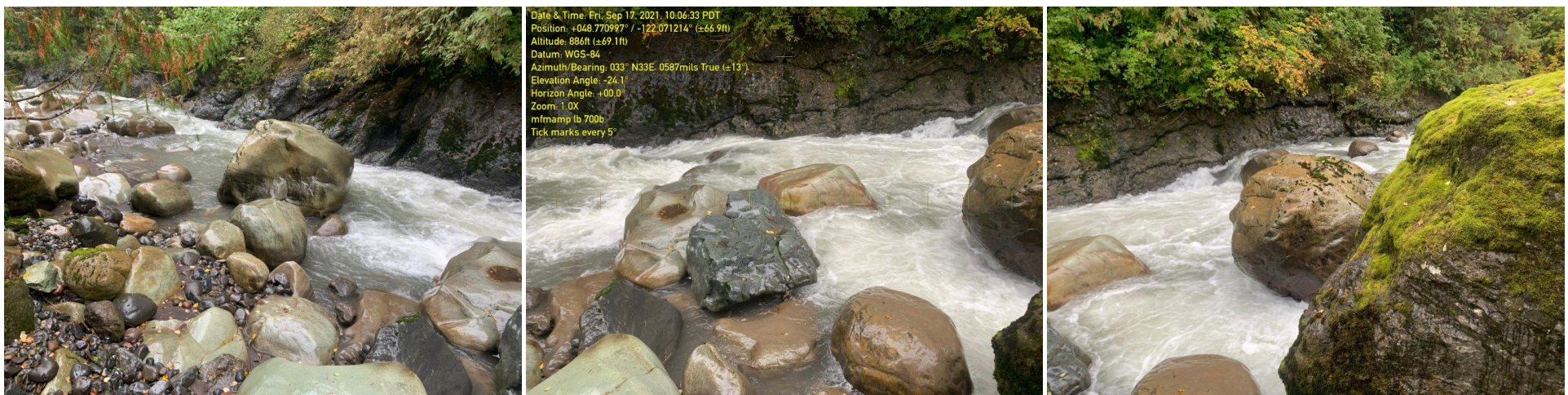


Transect 700

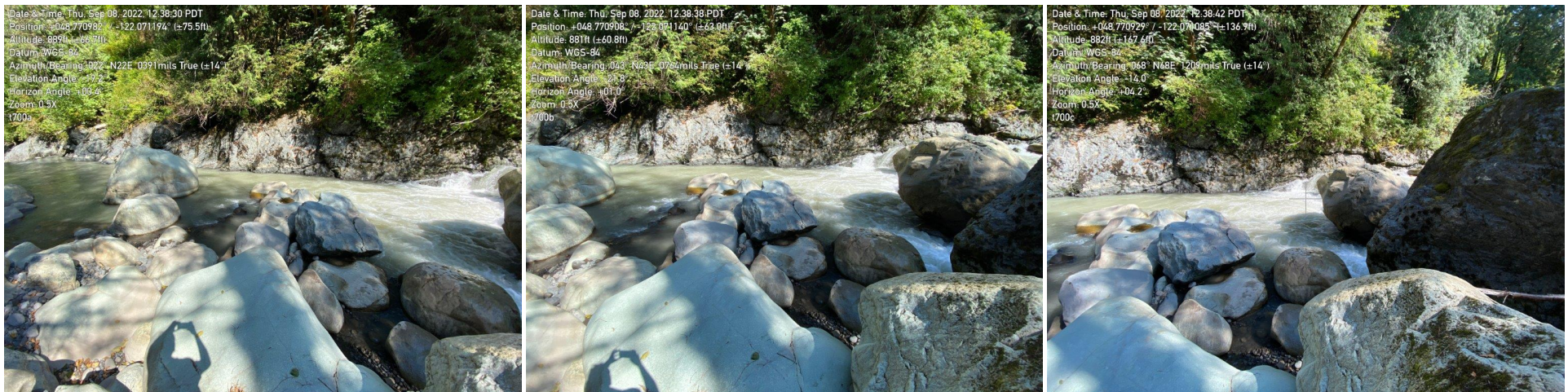
October 2020



September 2021

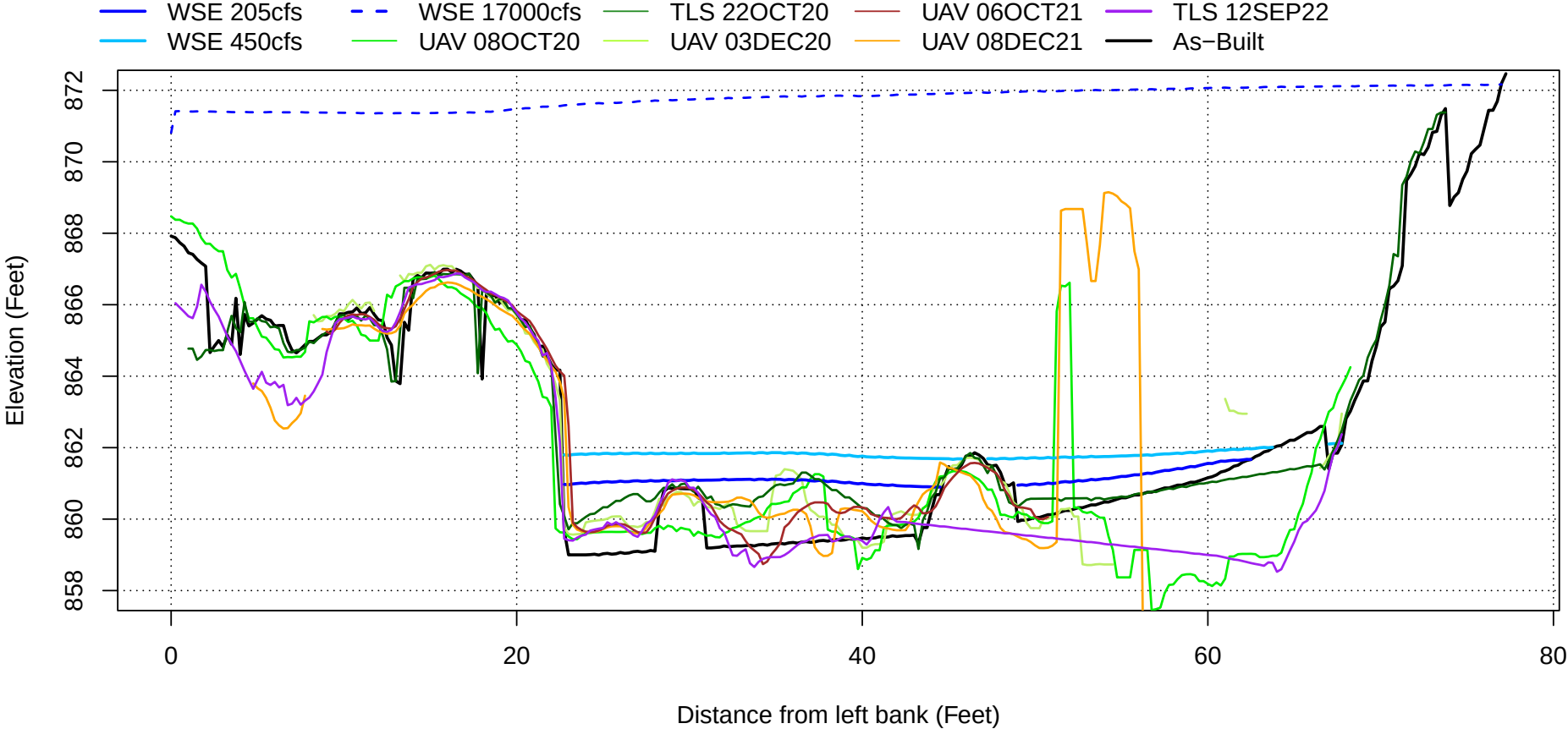


September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker

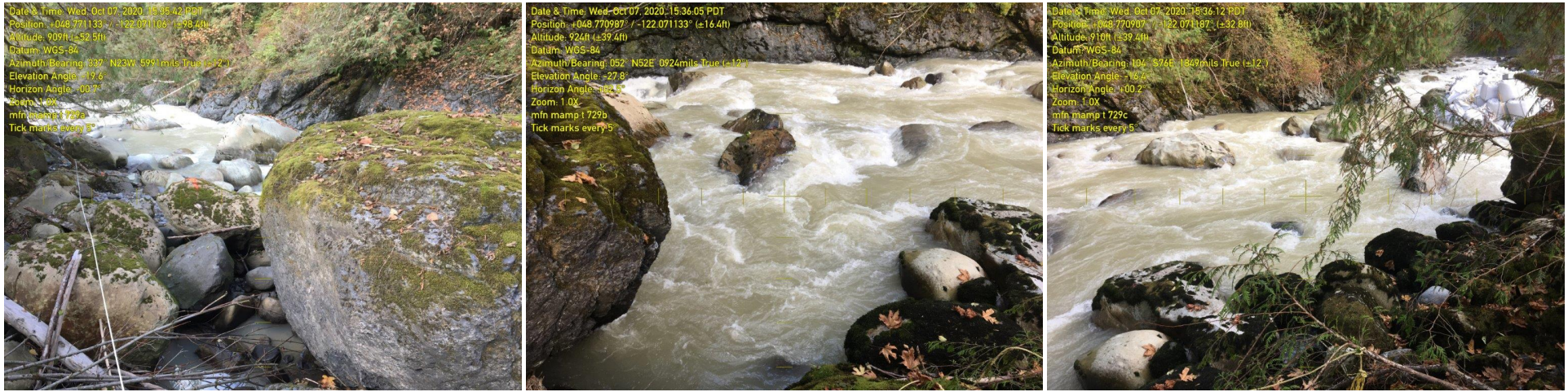






Transect 729

October 2020



September 2021

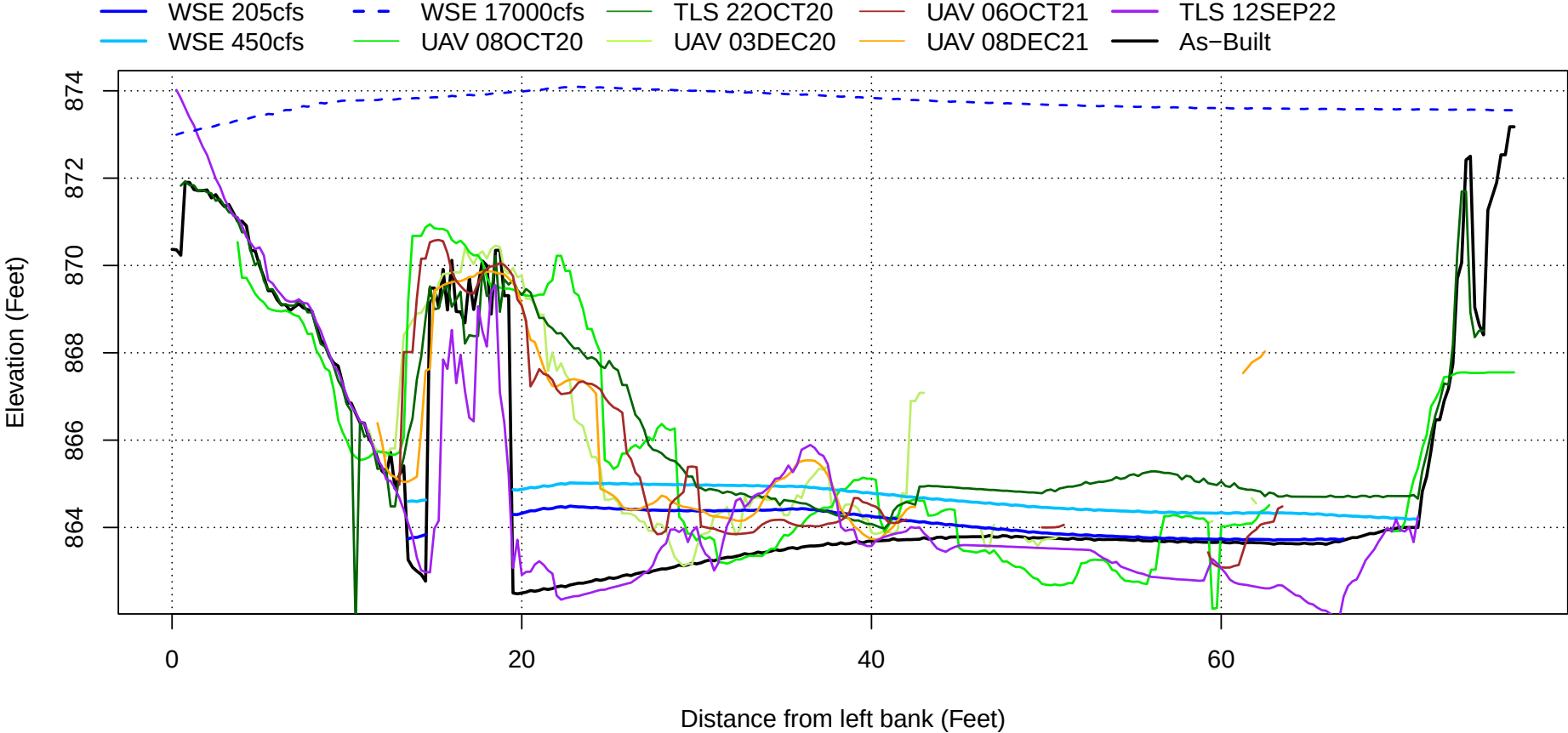


September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker

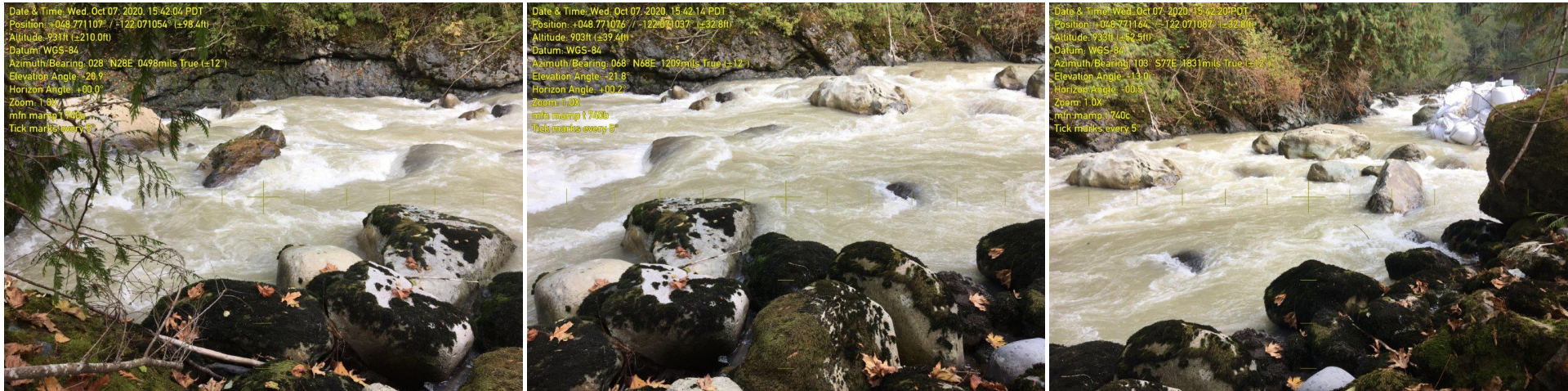






Transect 740

October 2020



September 2021

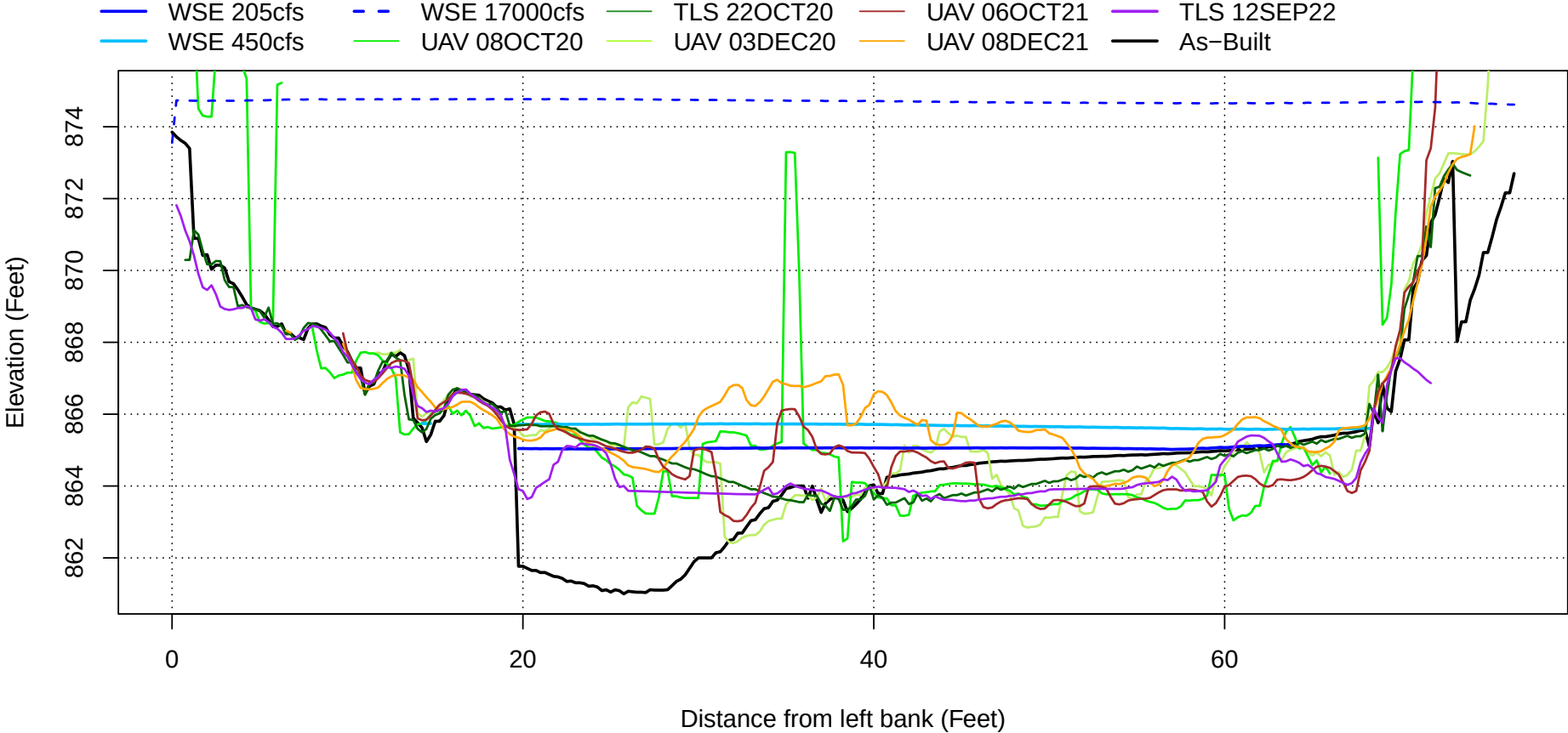


September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker

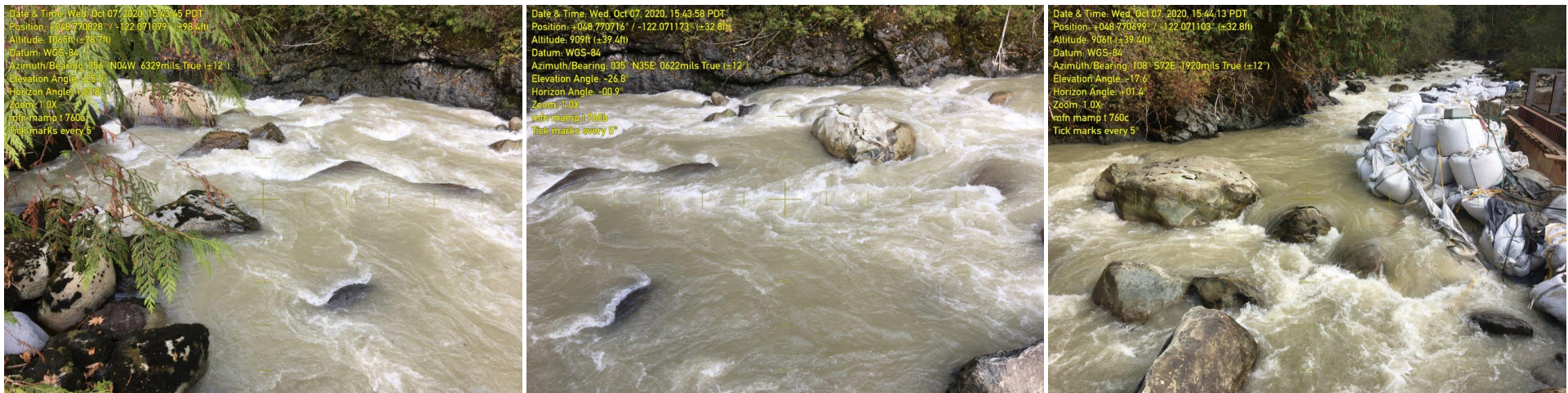




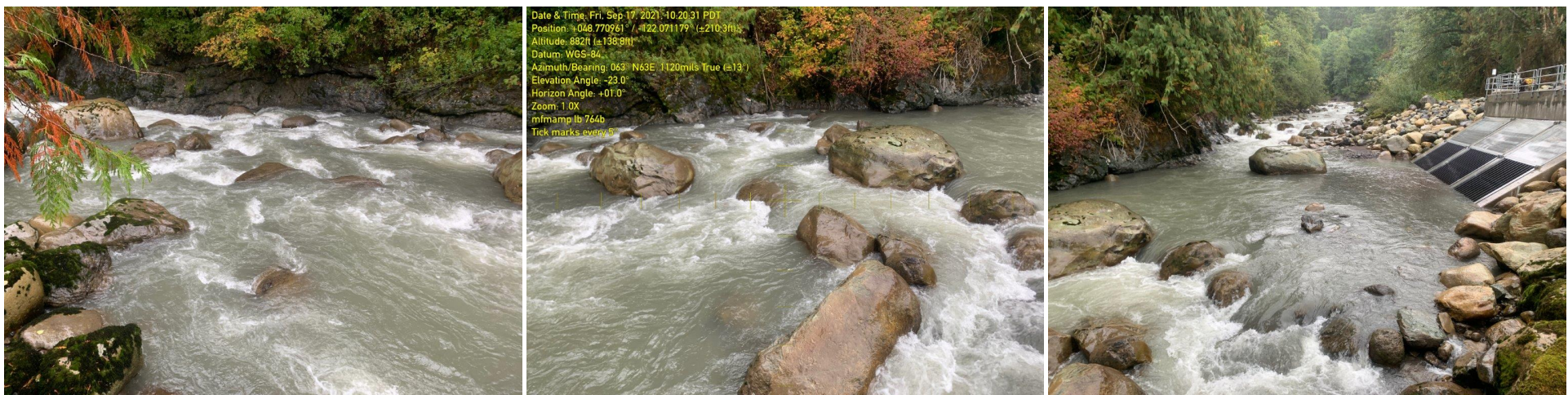


Transect 760

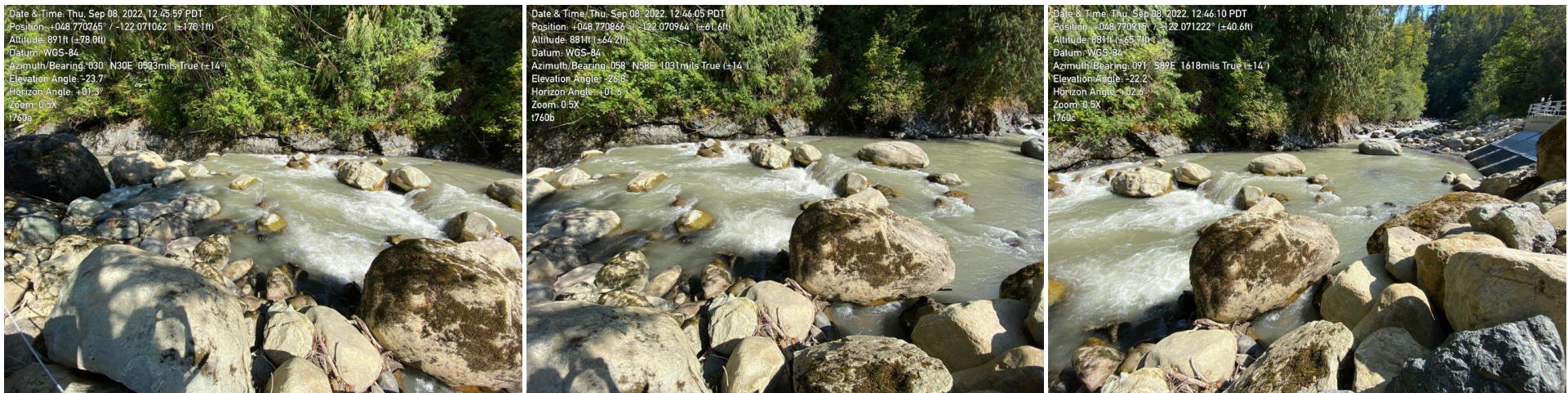
October 2020



September 2021



September 2022



Photographs taken looking downstream (left), perpendicular to flow (center) and upstream (right) at the transect location marker



