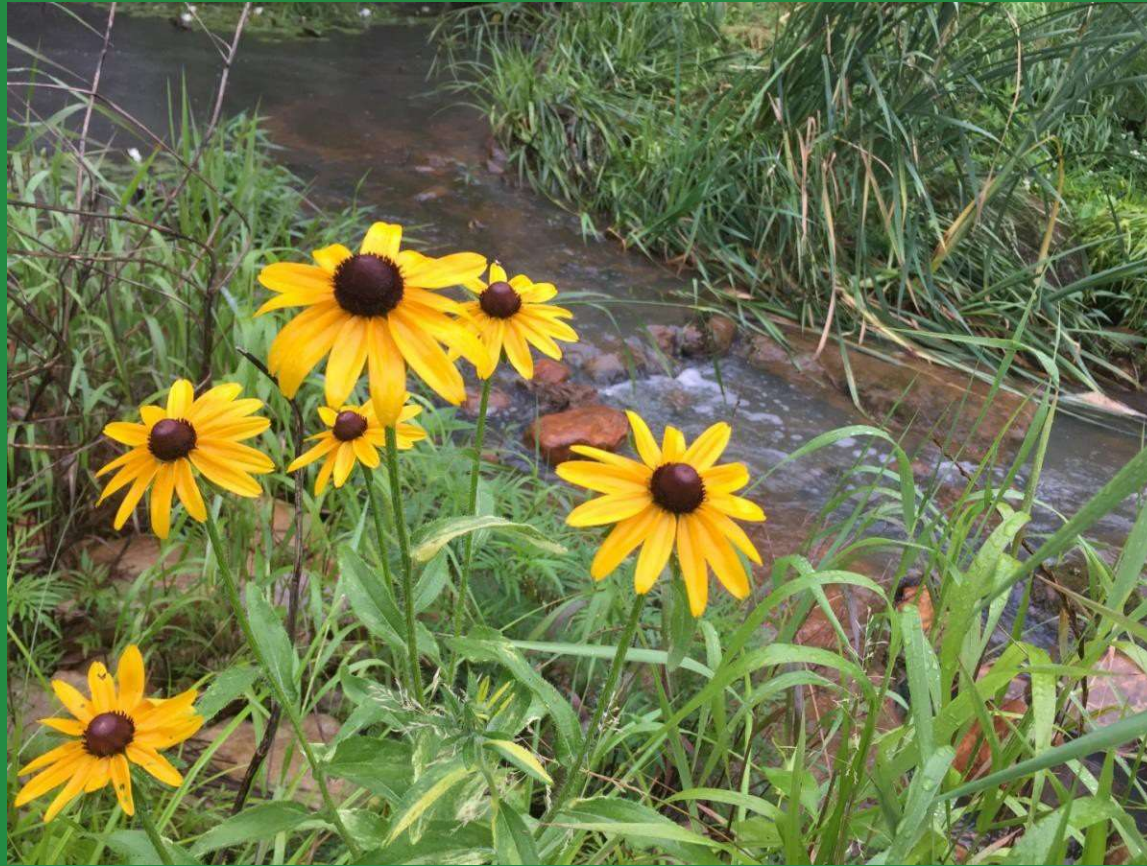


Stream Restoration in the 51st State!



★ ★ ★ DEPARTMENT
OF **ENERGY &**
ENVIRONMENT

★ ★ ★ WE ARE
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DC GOVERNMENT OF THE
DISTRICT OF COLUMBIA
MURIEL BOWSER, MAYOR

Natural Channel Design





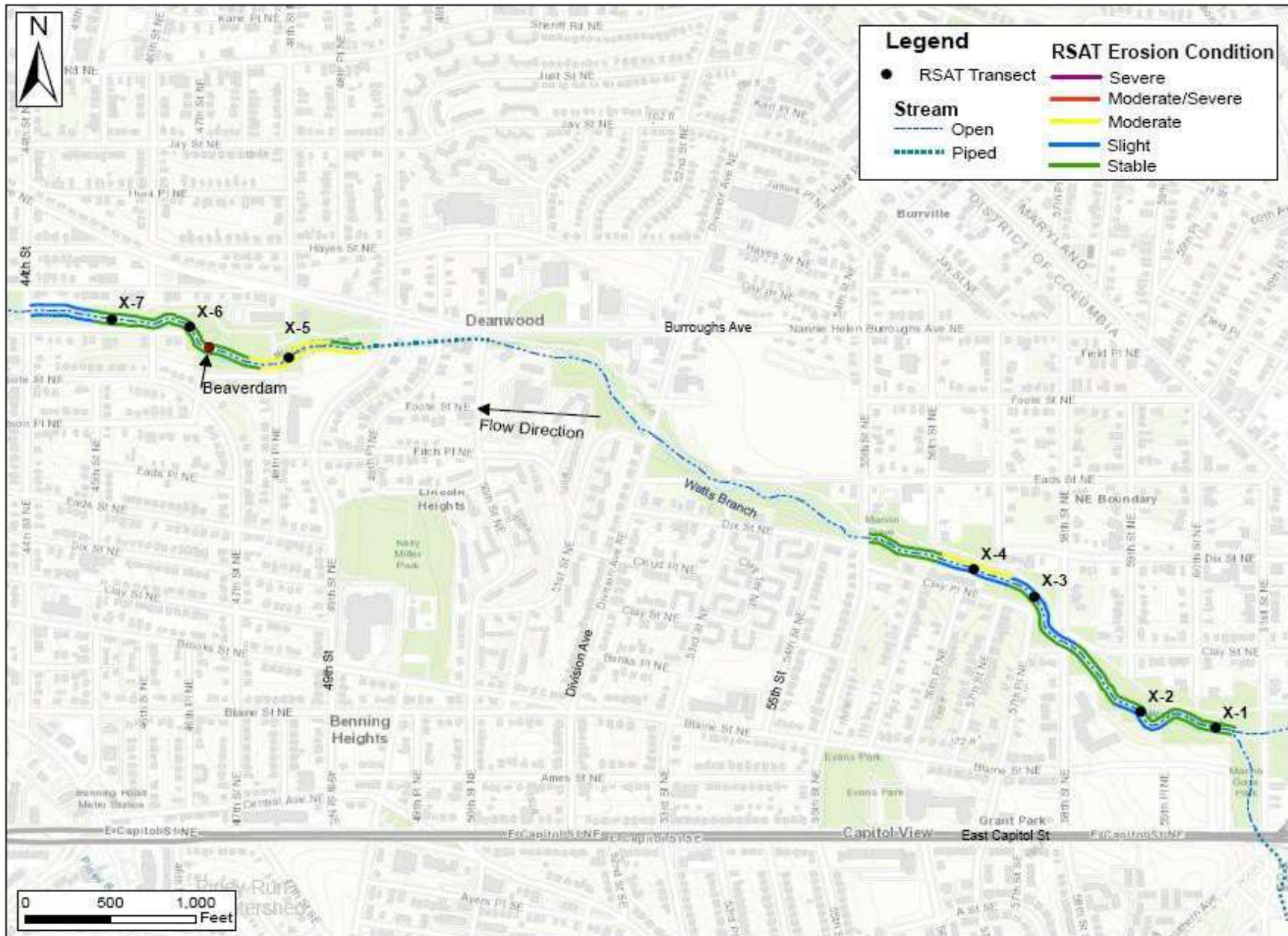






Watts Branch RSAT

2019



Natural Channel Design

The Good

- Generally stable
- Canopy regrowth
- Fish habitat
- Relatively low material cost
- Beavers came back!!!

The Bad

- Bankfull not a good determining factor
- Small failures become large failures fast
- Floodplain/bankfull bench too narrow
- Invasive plants
- Really weak around meander bends
- Deep scour



Achieving Maximum Floodplain Connectivity

1. Milkhouse Run
2. *Nash Run*
3. Pope Branch
4. Springhouse Run
5. *Alger Park*
6. Branch Ave. Park

Nash Run - Before



Nash Run



Nash Run



Pre-Restoration



2016



2016



2017



2018



2018



2021



Alger Park - Before



Alger Park - During



Alger Park - After



Alger Park - After



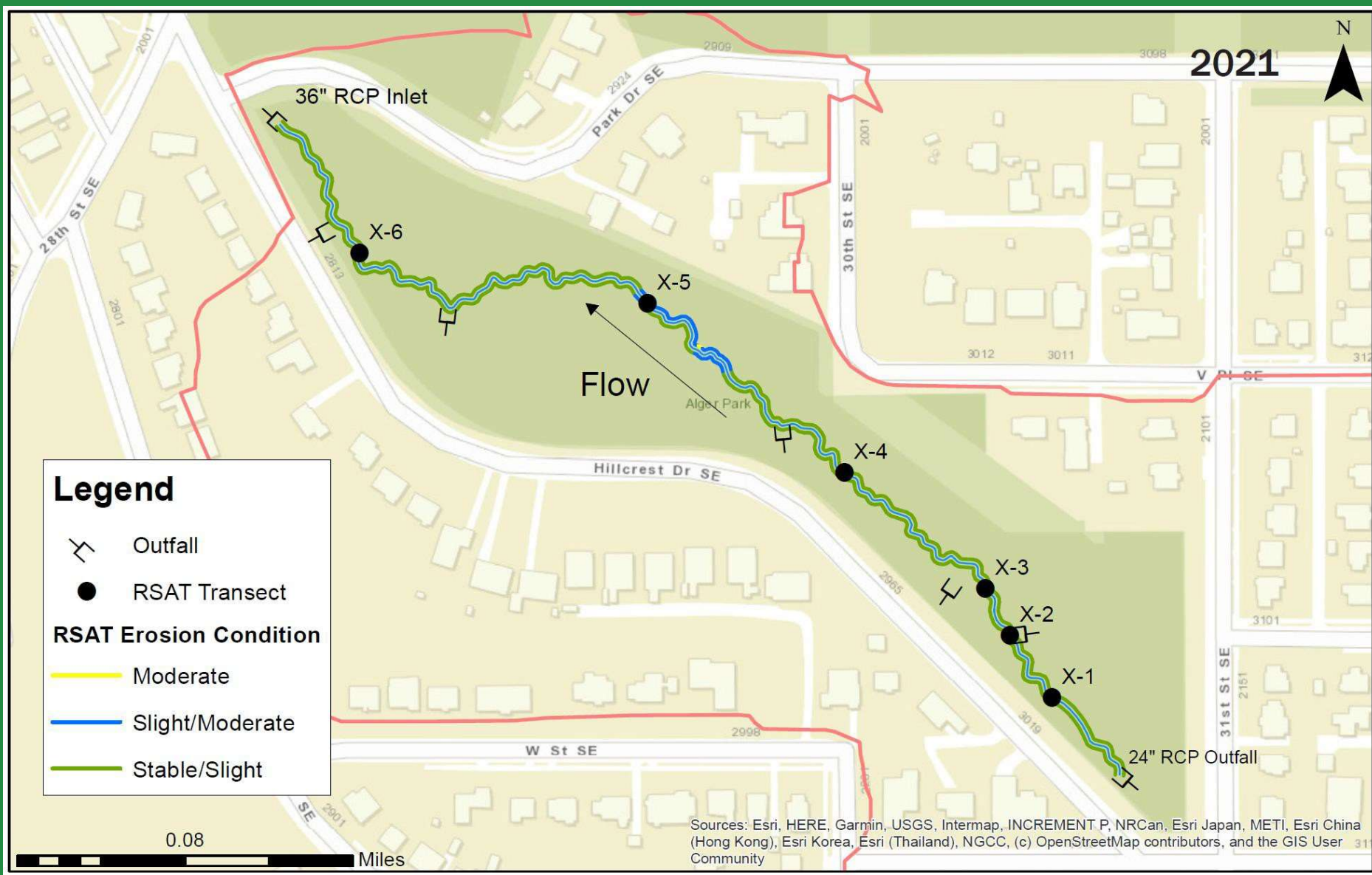
Alger Park – Before & After



Pre/Post-Restoration Monitoring



Alger Park



Alger Park

Table 9. Summary: Macroinvertebrate/Benthic Index of Biological Integrity (BIBI) Metrics¹

Sample Date	No. of Individuals Collected	Total No. of Taxa	Total No. of EPT Taxa	Total No. E Taxa	Percent Intolerant Urban (%)	Percent E Taxa	Number of Scraper Taxa	Percent Climbers	MBSS BIBI Score	MBSS BIBI Verbal Ranking
04/16/2015*	130	(3)	(1)	(1)	(1)	(1)	(1)	(3)	1.6	V. Poor
04/06/2021	155	19.0(3)	2.0(3)	0.0(1)	1.9(1)	0.0(1)	2.0(5)	65.8(5)	2.7	Poor

*As reported by Biohabitat and LimnoTech, 2015

Table 14. Stream Restoration Verification Lengths

Stream Name	Survey Date	Weighted LOC (ft) ¹	Project Restored Bank Length (ft)	Surveyed Restored Bank Length (ft)	Percent Stable Reach Length(%)	Project Verbal Status
Alger Park	8/17/2021	9.42	3,073.0	3,063.5	99.69%	Pass

¹ See Appendix G and H; Percent Stable Reach Length Interpretation: >89% = Functioning (Pass); 60% to 80% = Major Compromise (Action Needed); < 50% = Project Failure (Fail)

Nash Run



Nash Run

F. Provisional Fish List (2014 - 2021)

Species	Pre-Restoration		Post-Restoration						
	Summer 2014	Summer 2015	Summer 2016	Summer 2017	Summer 2018	Summer 2019	Summer 2020	Summer 2021	
American eel	12	40	-	2	-	13	31	34	
Banded killifish	279	386	527	151	34	125	32	173	
Blacknose dace	-	1	-	-	124	-	-	4	
Bluegill sunfish	1	-	-	-	12	-	5	1	
Creek chubsucker	1	2	-	-	-	-	-	8	
Mosquitofish	134	90	2,234	930	1029	2	825	299	
Green sunfish	48	29	-	9	41	14	26	29	
Largemouth bass	-	-	1	-	12	3	-	5	
Mummichog	158	341	59	280	366	50	157	624	
Northern creek chub	-	2	-	-	-	4	2	5	
Northern snakehead	1	-	-	-	-	-	-	-	
Pumpkinseed	1	-	-	-	36	12	1	8	
Redbreast sunfish	3	-	-	-	17	3	4	1	
Sunfish hybrid	2	-	-	-	-	2	-	1	
White sucker	-	11	-	-	-	-	-	8	
Brown Bullhead	-	-	-	-	62	13	5	1	
Yellow Bullhead	-	-	-	-	-	1	12	8	
Tessellated Darter	-	-	-	-	-	-	-	7	
Total	640	902	2,821	1,372	1,733	242	1,161	1,216	
*Post-restoration									

What have we learned?

- We don't have a preferred restoration approach.
- Access to floodplain/ability to spread out flow is essential.
- Stability and infrastructure protection are good outcomes.
- Need to have a good design & construction teams.
- Nature based approaches should be the focus.
- Set high but achievable goals.



Upcoming Stream Projects

- Park Drive Gullies (2023)*
- Fort Dupont (2024)*
- Stickfoot Branch (2024)*
- Rock Creek Gullies (2024)
- Oxon Run (2025)
- Pinehurst (2025)
- Daylighting Opportunities (Anacostia Park, Fort Dupont, Langston Golf Course)

*Anacostia Watershed



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