

PLANTS OF THE ROCK POOLS



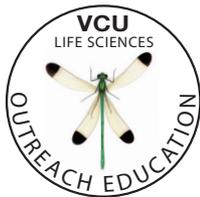
SUMMER / FALL
BELLE ISLE SOUTH

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SCIENCE in the Park

Science in the Park provides science-focused educational materials about the geology, habitats, and flora and fauna of the James River Park System in Richmond, VA. We hope to enrich the Park experience for local and regional school systems, communities, visitors, and regular users of the Park through web-based, self-directed explorations, guides, videos, and lesson plans. Only when people know something can they love it; only when people love something will they cherish and protect it.

Our project has been funded by private grants. It is a collaborative effort between Virginia Commonwealth University's Life Sciences Outreach Education and: the VCU Biology Department, Ralph White, the Friends of James River Park, the City of Richmond's James River Park System, and many, many talented and knowledgeable individuals.



Field Notes – 23 August 2012. Location: 37° 32' 3" N, 77° 27'19" W to 37° 31'28"N, 77° 27'19" W; James River between the end of the service road east of Park Headquarters and the area even with the apartment high-rise on Riverside Drive. Description: exposed granite bedrock on south side of river, small sandy islands anchored by trees, cracks between rocks & rock pools. River level very low (3.88 ft at Westham Gauge at noon & dropping). 53 spp. identified.

— Catharine White Tucker

Rock Pools and How They Form

Holes in the granite riverbed are referenced as potholes. They are caused by the grinding action of gravel and larger stones that lodge in the cracks of rocks during floods. When a pebble is trapped, it is vibrated by the current and grinds down the rock around it. As the indentation widens, water swirls the rock inside, eventually creating a circular hole. Over time, one hole may eat into another, creating an oval shape. Some pot holes hold water; others connect to underlying cracks in the bedrock and slowly drain. Some are deep (> 5 feet), but most are shallow (~ 1 foot). Some are very large (>10 feet), but most are 1 or 2 feet in diameter. Shallow holes and depressions tend to dry out during the summer.

Rock Pools are usually potholes that have collected sand and soil. The scouring of muddy floodwaters can cause rock pools to form in odd depressions behind boulders. Rock pools have also formed in cavities left by the quarry industry's cutting and removal of curbstones from the bedrock. Pools that accumulate the most sand generally grow the biggest plants, provided there is moisture. As the roots of vegetation trap more sand and silt, the plants grow bigger. Large floods can reverse this process by stripping everything away.

Helpful References

- *Flora of Virginia* by Alan S. Weakley, J. Christopher Ludwig, John F. Townsend
- *Wildflowers & Grasses of Virginia's Coastal Plain* by Helen Hamilton and Gustavus Hall