# Upper Potomac River Buoy Geography

Welcome to the Upper Potomac buoy, anchored on a ledge in 14' of water at 38 degrees 47.260 minutes North latitude, 77 degrees 02.139 minutes West longitude, just east of the river's main channel and about one-third of a mile south of the Capital Beltway's Woodrow Wilson Bridge.

Capt. Smith and his crew would find this section of the Potomac changed beyond recognition if they returned today. After passing the relatively natural, wooded riverfront from the Mason Neck National Wildlife Refuge on the Virginia side and the National Colonial Farm on the Maryland side, they would be startled to see large new waterfront mansions and then Mount Vernon to the west and Fort Washington to the east. They would be even more amazed as they made the turn at Fort Washington, where suddenly the view opens to the Wilson Bridge and the metropolitan skylines on both sides of the river beyond.

Much of the Potomac shoreline from the Occoquan River's mouth past Mount Vernon to the Wilson Bridge has been preserved in recent years, but the area around this buoy is vastly changed. The coves opposite it on both sides were not there in 1608. They are former gravel pits, mined in the nineteenth century for material to build and pave the District of Columbia and its suburbs. To the west is Cameron Run, a formerly navigable stream within the City of Alexandria. Two centuries' worth of sediment runoff from construction has turned the cove at its mouth into an extremely shallow mud flat that is exposed by very low tides. To the east is Smoot Cove, which has a navigable channel to the marina docks of the huge National Harbor complex of condominiums, hotels, conference centers, restaurants, and entertainment venues.

Above the bridge, the waterfront of Old Town Alexandria opens up on the left, reflecting some of its eighteenth century seaport heritage even in new construction before giving way to Reagan International Airport and Arlington's Crystal City development. On the District side, the riverfront is taken up with the massive Blue Plains wastewater treatment plant, a naval research laboratory, and Bolling Air Force Base before changing over to urban park land from the mouth of the Anacostia River upstream to Georgetown. Most of the shoreline on both sides is hardened by wood, steel, and concrete bulkheads and piers. The land behind them is largely filled-in material. The take-home message is that the shoreline here is largely man-made and much different from what Smith and his men saw.

The river's channel has changed as well, largely from sediment that has flowed down the river from its headwaters in Virginia's Shenandoah Valley, Western Maryland, and West Virginia. This buoy sits on the lower end of a great shoal of that material that has formed on the east side of the Potomac's channel from Georgetown downriver to Smoot Cove. As Washington and its suburbs grew from the late nineteenth century on, sewage and stormwater began to pollute the river, till it became virtually a public health hazard in the 1960s, but the Clean Water Act of 1972 began a turnaround. Blue Plains undertook a huge effort to reduce phosphorus

pollution, which resulted in a renaissance for water quality in the 1980s and '90s. That change fostered a great rebound in underwater grasses, especially on this shoal, that brought back fish like largemouth bass and birds, like bald eagles, ospreys, and wintering waterfowl.

Today, however, the health of this section of the Potomac appears to be slipping, largely due to explosive population growth. Blue Plains has had a difficult time reducing nitrogen to current water quality standards, while growth in the Washington Metropolitan region and even around the Potomac's headwaters threatens water quality with pollution from stormwater and agriculture. The river is still a grand place to explore, fish, and watch birds, but it is a reminder that with millions of people living in its watershed and more moving in every day, we can never take its health for granted.