



From toes to top-of-the-atmosphere: Fowler Sneaker Index

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Figure 1

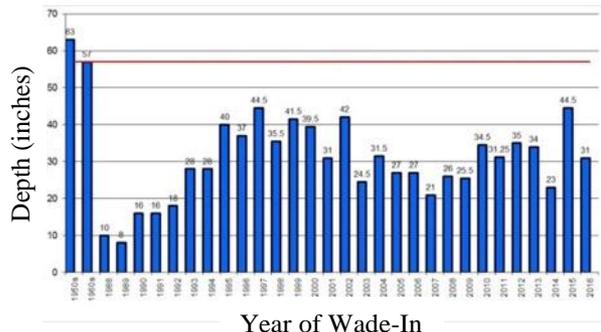


Figure 2

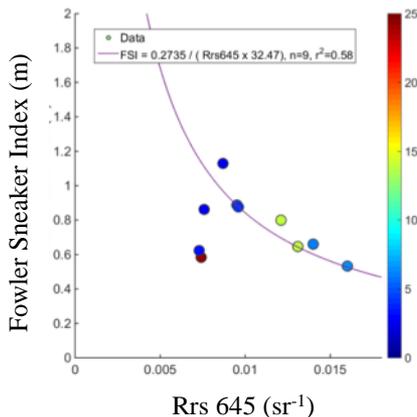
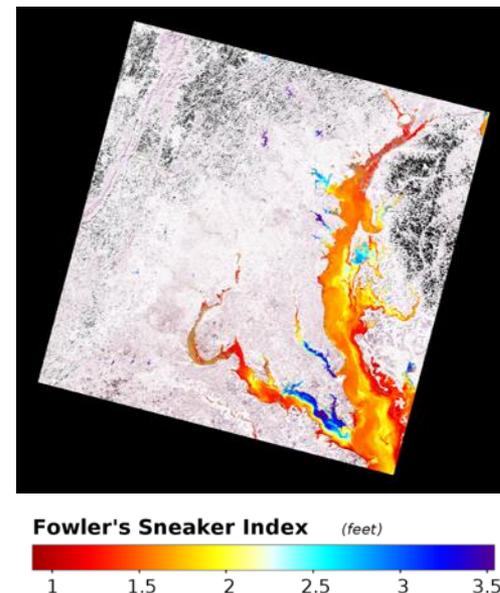


Figure 3



Fowler Sneaker Index (FSI), developed by a NASA summer intern, is a new Ocean Color application that facilitates continuous monitoring of environmental conditions in the Chesapeake Bay. It builds on three decades of citizen science data collected by former Maryland State Senator Bernie Fowler, during his yearly “Wade-ins in the Patuxent River”. FSI demonstrates how NASA’s Earth-observing tools, in combination with a concerned and engaged public, can take science from the tips of our toes to top-of the atmosphere and back.



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References:

B. A. Crooke, L. I. McKinna, I. Cetinić, "Toes to top-of-atmosphere: Fowler Sneaker Index" Optics Express (in prep)

B.A. Franz, S.W. Bailey, N. Kuring, P.J. Werdell, Ocean color measurements with the Operational Land Imager on Landsat-8: implementation and evaluation in SeaDAS. Journal of Applied Remote Sensing, 9(1), pp.096070-096070 (2015).

Data Sources: Maryland Department of Planning, MODIS Aqua, MODIS Terra, LANDSAT

Technical Description of Figures:

Figure 1: *Images taken from the Maryland Department of Planning website depict senator Bernie Fowler holding his sneakers that he uses to collect data regarding the visibility in the Patuxent River – shown in the bar plot in blue.*

Figure 2: *Relationship between visibility, which is determined during the annual Wade-Ins, and remote sensing reflectance as measured by MODIS Aqua and MODIS Terra, are used as a final FSI algorithm.*

Figure 3: *FSI algorithm applied to a LANDSAT image demonstrating the applicability of this new Ocean Color product.*

Scientific significance, societal relevance, and relationships to future missions:

In recent years, citizen-collected data has started to assert itself as a powerful resource used by scientists worldwide to aid in understanding of Earth's natural variability. Although sometimes non-conventional, these datasets, such as Fowler Sneaker Index, present an opportunity through which NASA Earth observations can be used to address societal concerns locally and globally.