1077-92-1152 **Erik J Nelson*** (enelson2@bowdoin.edu), Department of Economics, Bowdoin College, 9700 College Station, Brunswick, ME 04011. *The math and algorithms of mapping and valuing ecosystem services.* Preliminary report.

Integrated Valuation of Ecosystem Services and Tradeoffs (InVEST) is a family of GIS modules that can be used to map and value the goods and services from nature produced on landscapes and coastal zones. If properly managed, ecosystems yield a flow of services that are vital to humanity, including the production of goods, life support processes, and life fulfilling conditions, and the conservation of options. Despite its importance, this natural capital is poorly understood, scarcely monitored, and, in many cases, undergoing rapid degradation and depletion. InVEST enables decision-makers to assess the tradeoffs associated with alternative choices and to identify areas where investment in natural capital can enhance human development and conservation in terrestrial, freshwater, and marine ecosystems. I will use my session to demonstrate the math and algorithms behind the modules, including recently added algorithms for mapping and measuring service provision and value uncertainty. I will also demonstrate how InVEST modules are being linked with the Google Earth engine. This partnership will allow the user to draw land-use changes on the computer screen and then receive immediate information on the expected impact of this change on service provision and value. (Received September 16, 2011)