



## Purpose/Utility of Research

### Final Ecosystem Goods and Services – Classification System (FECS):

- a non-duplicative system that identifies and classifies environmental things (i.e., stocks) that specific, identified beneficiaries appreciate, need, and/or value
- designed to define these environmental things that help to identify metrics that can be used in trade-off and sustainability decisions

### National Ecosystem Services Classification System (NESCS):

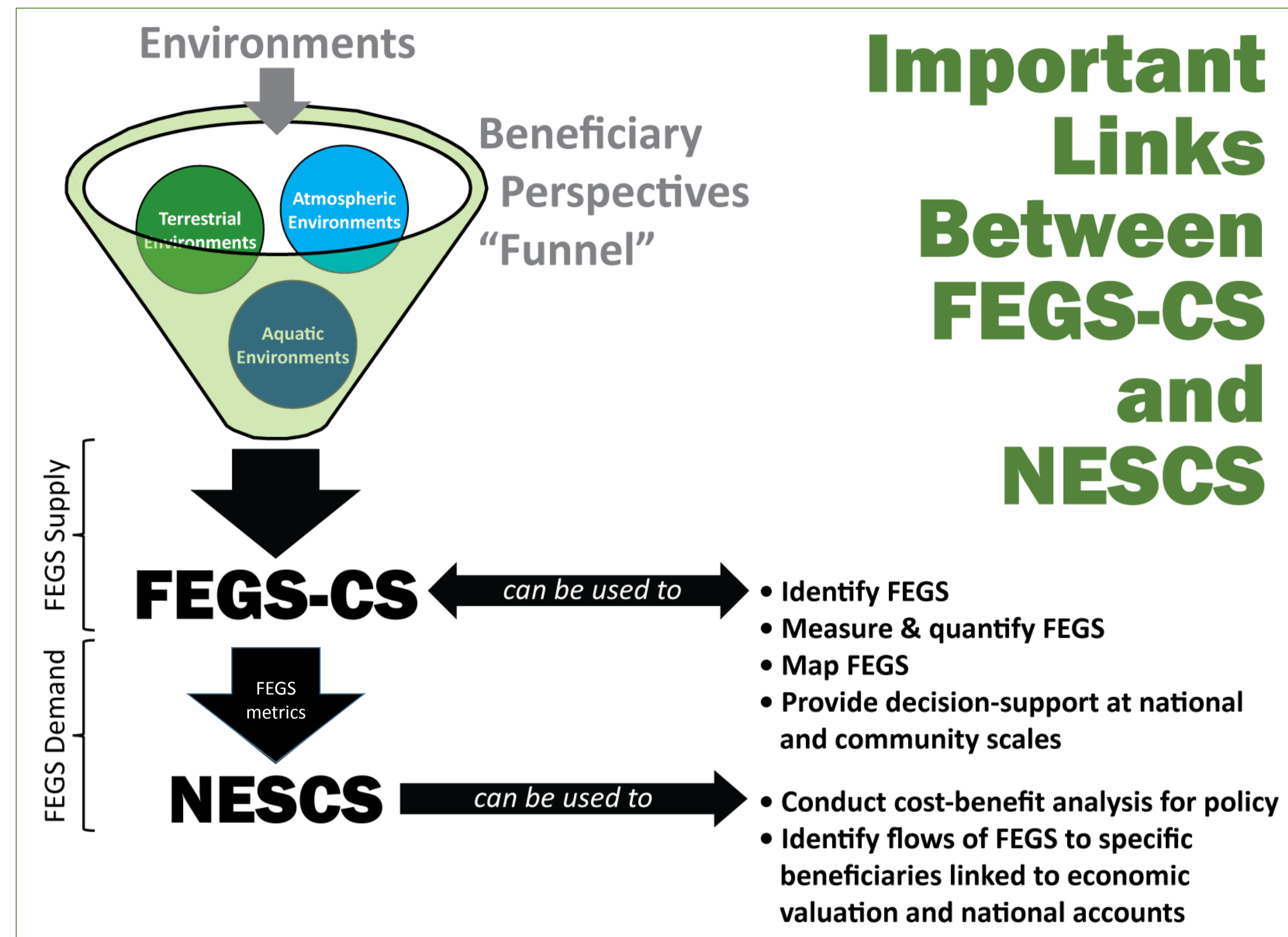
- begins with the same environmental classes and subclasses as the FECS classification, but is designed to assist in precise evaluation from people who use these environmental things (i.e. flows)
- not primarily designed to generate its own environmental metrics, so using the metrics and measures for environmental things from FECS is essential for practical application of NESCS, for marginal analysis and green accounting

**Our collaborative research** helps link the NESCS, which is designed to support scenario (marginal) analysis, that itself can support economic valuation efforts, to FECS environmental categories and ecosystem service metrics.

**Linking FECS and NESCS** will inform, enhance, and facilitate policy decisions.

## Connection to SHC Portfolio

- Cost-benefit analyses are routinely performed by USEPA's Office of Water (OW) and Office of Air Resources (OAR). The FECS / NESCS collaboration will expand USEPA's ability to consider environmental consequences when conducting cost-benefit analyses in policy applications.
- Results from FECS / NESCS collaboration could prove useful to other parts of USEPA, as well as to other federal agencies interested in standardizing approaches for ecosystem services quantification and valuation.



## Important Links Between FECS and NESCS

**Figure 1** (left) FECS classifies FECS by their environmental source and by their specific beneficiary use. The output from FECS-CS can be used for different natural science objectives, such as the quantification of ecosystem services. The environmental categories and metrics from FECS-CS are essential inputs to NESCS.

## Highlights

- The FECS-CS has been described in a citable USEPA Report (EPA/600/R-13/ORD-004914) and is available on the FECS-CS website ([gispub.epa.gov/FECS/](http://gispub.epa.gov/FECS/)).
- Some provisional metrics have been included on the FECS-CS website, and others are in development.
- FECS-CS and NESCS are being introduced to and considered by other federal agencies and the private sector, as improvements to methods others have used to define and quantify ecosystem services.
- A USEPA report describing NESCS is under review, to be released by September 2015.
- Contact Dixon Landers ([landers.dixon@epa.gov](mailto:landers.dixon@epa.gov)) or Joel Corona ([corona.joel@epa.gov](mailto:corona.joel@epa.gov)) for more information.

## Intended and Potential End Users

- Program offices
  - Office of Air and Radiation (OAR)
  - Office of Water (OW)
  - Office of Solid Waste and Emergency Response (OSWER)
  - Office of Sustainable Communities (OSC)
- Communities and Regional offices
- Private sector and other federal agencies
- National accounts

## Lessons Learned

- Careful and continuing collaboration between natural and social scientists in the development of ecosystem services classification systems enhances their usefulness to both sides.
- FECS-CS meets some criteria required by social science for linking environmental outputs to human well-being, and facilitates metric identification that can be consistently used for quantifying environmental benefits to people.
- NESCS meets some criteria required by environmental science to define ecosystem services in a way that facilitates economic analyses for policy use, and perhaps for national accounting.
- FECS-CS and NESCS are built to offer sufficient functionality to communities, other federal agencies, private-sector users, and international agencies. As the classification systems are used or adapted by stakeholders, standardization will be enhanced across a range of institutions interested in appreciating ecosystem services properly, and in building a large database to enhance later analyses.

