

Soil Ecosystem Services

An ecosystem service is a benefit to society derived from a healthy ecosystem property or process

Soil provides a wide diversity of ecosystem services



Soil is an invaluable resource that sustains civilization

Economic benefits of soil ecosystem services

- Soil is priceless, yet calculated values of some ecosystem services are > \$17 trillion per year
- Biological nitrogen fixation by soil microorganisms contributes ~ \$50 billion per year

Our essential natural resources — soil, water, air

- Robust soil quality leads to more water available for plant roots and cleaner water in streams and lakes
- Enhanced soil biological activity turns organic wastes into valuable nutrients and degrades toxic elements
- Carbon stored in soil regulates the climate by mitigating greenhouse gas emissions
- Plant and animal biodiversity are dependent upon soil biodiversity

“The nation that destroys its
soil, destroys itself.”

—Franklin Delano Roosevelt

Recommendations

Research

- Develop a better understanding and documentation of soil biodiversity
- Provide more comprehensive economic valuations of soil ecosystem services
- Optimize management systems to capture the full breadth of ecosystem services and avoid trade-offs

Policy

- Support adoption of robust conservation management approaches that enhance soil ecosystem services
- Develop payment policy to land managers to maintain and improve ecosystem services
- Fund research to elucidate and quantify soil ecosystem services

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