

**GREGORY P. ASNER PHD**  
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I lead the Center for Global Discovery and Conservation Science (GDCCS), an ASU research unit with faculty and labs based in Hawai‘i and Arizona, dedicated to the exploration and stewardship of terrestrial and marine ecosystems. I also co-direct the non-profit organization Hawai‘i Marine Education and Research Center (MERC) where we support and blend Indigenous knowledge leadership, science, and conservation for community resilience in a changing climate. My long-time research combines terrestrial and marine spatial ecology, evolutionary ecology, and remote sensing research and conservation.

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## **I. Professional Experience**

### ***Current***

- Director, ASU Center for Global Discovery and Conservation Science, Hawai‘i (2019 -)
- Co-Director, Hawai‘i Marine Education and Research Center (2018 -)
- Professor, ASU School of Ocean Futures (2022 -)
- Senior Global Futures Scientist, ASU Global Futures Laboratory (2022 -)
- Professor, ASU School of Geographical Sciences and Urban Planning (2019 -)
- Professor (adjunct), ASU School of Earth and Space Exploration (2019 -)

### ***Previous***

- Senior Staff Scientist, Dept of Global Ecology, Carnegie Institution for Science (2018 – 2019)
- Professor, Stanford Univ, Integrated Program in Environment & Resources (2002 – 2022)
- Professor, Stanford Univ, Earth System Science (2007 – 2019)
- Assoc Professor, Stanford Univ, Geological & Envir. Sciences (2004 – 2007)
- Staff Scientist, Dept of Global Ecology, Carnegie Institution for Science (2001 – 2017)
- Asst Professor, Stanford Univ, Geological & Envir. Sciences (2001 – 2004)
- Asst Professor, Univ of Colorado, Geological Sciences & Envir. Studies (1999 – 2001)
- Postdoctoral Fellow, Stanford Univ, Geological & Envir. Sciences (1998 – 1999)
- Staff, The Nature Conservancy of Hawai‘i: O‘ahu and Moloka‘i Preserves (1998 – 1999)
- Research Staff, University of Hawai‘i, Mānoa (1993 – 1995)

## **II. Professional Preparation**

1997	Ph.D. Biology, Univ. of Colorado, Boulder (ecology thesis)
1995	M.S. Geography, Univ. of Colorado, Boulder (ecology thesis)
1991	B.S. Engineering, Univ. of Colorado, Boulder (radiative transfer thesis)

## **III. Honors and Awards**

### ***Major***

- Recipient, Heinz Award for the Environment, 2017
- Elected Fellow, Ecological Society of America, 2016
- Elected Fellow, American Geophysical Union, 2015
- Elected Member, U.S. National Academy of Sciences, 2013
- Awardee, Presidential Early Career Award (PECASE), 2000

### ***Additional***

- Batseva Fellow, Israeli Academy of Sciences and Humanities, 2017
- Pongo Environment Award, 2017
- IFOF Honoree Award in Aviation, 2015
- Association for American Geographers Outstanding Contributions Award, 2014
- Nominet Trust 100 Award for Social Innovation, 2014
- Popular Science Magazine Brilliant Ten Award, 2007

- NASA Early Career Award, 2000
- NASA Group Achievement Award, 1999
- NASA Earth System Science Fellowship, 1996-1998
- NSF Biosphere-Atmosphere Interactions Fellowship, 1996-1998
- W.M. Keck Foundation Fellowship Award, 1995-1996
- Mabel Duncan Conservation Biology Award for Hawai'i, 1996

#### IV. University, National, and International Service

##### *Current Major Service*

2024-	<i>Member, Hawai'i Governor's Committee on Marine Affairs</i>
2023-	<i>Founder and Director, 'Āko'ako'a Reef Restoration Program, Hawai'i</i>
2022-	<i>Board Member, Bermuda Institute of Ocean Sciences</i>
2021-	<i>Chief Science Officer, Carbon Mapper Mission, <a href="http://carbonmapper.org">http://carbonmapper.org</a></i>
2021-	<i>Board Member, Global Conservation</i>
2020-	<i>Director, Allen Coral Atlas, <a href="http://allencoralatlas.org">http://allencoralatlas.org</a></i>
2014-	<i>Editorial Board Member, Proceedings of the National Academy of Sciences</i>
2006-	<i>Director, Global Airborne Observatory (formerly Carnegie Airborne Observatory)</i>

##### *Past and Current Service*

1996-1997	Science Team; NASA Lewis & Clark Satellite Missions
1998	Panelist; NASA Triana Satellite Mission
1998-2008	Panelist; NASA Large-scale Biosphere-Atmosphere Experiment in Amazonia Program
1998	Co-chair; International Forum on BRDF Remote Sensing
1998	Panelist; NOAA Climate and Global Change Program
1998-2015	Panelist; Natural Environment Research Council, United Kingdom
1999-2001	Member; NSF Long-term Ecological Research (LTER) Technology Committee
1999	Panelist; University of California, Digital Media Innovation Program
1999	Co-organizer; NASA Large-scale Biosphere-Atmosphere Experiment in Amazonia
1999	Advisor; Fundação Floresta Tropical (Tropical Forest Foundation), Brazil
1999-2009	Panelist; U.S. Strategic Environmental Research and Development Program
2000	Panelist; NASA New Millennium Program
2000-2001	Land-use Committee; Ecological Society of America
2001-2014	Panelist; NSF Environmental Biology Panels
2001	Panelist; NASA Visions Working Group for Decadal Strategic Plan
2002	Panelist; NASA Terrestrial Ecology Program
2002	Panelist; NASA New Investigator Program
2003	Co-convener; AGU Chapman Conference "Ecosystem Interactions with Land-use Change"
2003	Steering Committee; International Symposium on Remote Sensing; Honolulu, HI
2003	Panel Chair; NASA Terrestrial Ecology Program
2003	Panel Co-chair; NASA Northern Eurasia Environmental Science Program Initiative (NEESPI), Yalta, Ukraine
2003-2007	Steering Committee; NASA-Brazil Large-scale Biosphere-Atmosphere Experiment in Amazonia Program
2003-2006	Steering Group; U.S. Carbon Cycle Program
2004	Panelist; NASA Carbon Cycle and Ecosystems Review
2004-2006	Ecological Society of America (ESA) Habitat Change Rapid Response Team

2005 Panelist; World Bank Rural Days Conference

2005 NSF Committee for Environmental Research and Education

2005-2009 NASA Senior Review Committee (Chair, 2007-2009)

2005 Co-convener; Environmental Defense Fund (EDF) Global Deforestation and Forest Degradation Workshop

2005 Search Committee; USFS Institute for Pacific Islands Forestry

2005-2006 Panel Chair; NASA North American Carbon Program

2005 Panel Chair; Tropical Deforestation and Climate Change; UN Framework Convention on Climate Change COP-11, Montreal

2006-2007 Author; U.N. Livestock in a Changing Landscape Forum

2007 Lead Author; FLORA satellite mission concept. National Academy Decadal Survey

2007 Instructor; ASP Colloquium; National Center for Atmospheric Research

2007 Author; NASA Plant Physiology and Functional Types Working Group

2006-2007 Advisory Committee; Department of Land and Natural Resources; State of Hawaii

2008-2017 Science and Technology Advisor, Peruvian Ministry of Environment

2008 Panel Chair; NASA Carbon Cycle and Ecosystems Joint Science Workshop

2008-2019 Director; CLASlite Forest Monitoring and Training Program

2008-2010 Advisor; National Ecological Observatory Network (NEON)

2008-2011 Steering Committee; bioDISCOVERY Program, Diversitas International

2008-2021 Working Group; NASA HypIRI-SBG satellite development team

2009-2012 PI; Google Earth Engine, Google.org and Google Inc.

2009 Panelist; Tropical Extinction Symposium, Museum of Natural History; Smithsonian

2009 Panelist; US Congressional panel on satellite monitoring for carbon markets

2009 Lead Author; GOFCC-GOLD Source Book on deforestation and degradation

2009 Panelist; U.S. Congressional panel on satellite monitoring of deforestation

2009 Delegate; U.N. Framework Convention on Climate Change COP-15, Copenhagen

2010 Steering Committee; Center for Tropical Forest Science, Smithsonian Institute

2010-2020 Editorial Board; *Remote Sensing of Environment*

2010 Panelist; International Plant Biology Symposium, Harvard University

2010 Co-author; UN FAO Historical Forest Degradation report

2010 Delegate; Convention on Biological Diversity COP-10, Nagoya; United Nations

2010-2013 Working Group; Governors Climate and Forests (GCF) Task Force, State of California

2010 Delegate; Ambassadors for Forests, Nagoya, World Wildlife Fund

2010 PI; Global Terrestrial Ecosystem Observatory proposal, Jet Propulsion Laboratory, NASA Earth Ventures

2010 Delegate; Framework Convention on Climate Change COP-16, Cancun

2011-2013 Senior Fellow, Energy and Climate Partnership; US State Department

2011 Advisor; World Bank; Carbon monitoring for the UNFCCC climate treaty

2012 PI; Land Ecosystem Assessment & Forecast mission proposal, Jet Propulsion Laboratory, NASA Earth Ventures

2012 Panelist; Forest Carbon Partnership Facility; World Bank

2012 Panelist; Latin American Development Bank

2013-2018 Working Group 3 Member; GEO Biodiversity Observation Network

2013 Panelist; Prince's Rainforest Project; London

2013 PI; Linnaeus mission proposal; Jet Propulsion Laboratory, NASA Earth Ventures

2013-2015 Advisory Board; Amazon Aid Foundation

2014-2017 Scientific Steering Committee, NGEE-Tropics, Department of Energy

2015-2017 Advisor; California Air Resources Board and CA Dept of Forestry and Fire Protection

2016- Working Group; Rapid Ohia Death Task Force; State of Hawaii

2015-2018 Author; National Academy of Sciences Decadal Survey for Earth Science and Applications from Space

2017-2019 Editorial Board; *Remote Sensing for Ecology and Conservation* journal

2018-2021 Carnegie and ASU Partnership Lead, *Allen Coral Atlas*; allencoralatlas.org  
2018-2022 Space Studies Board, National Academy of Sciences, Engineering and Medicine  
2019-2023 *Director*, Hawai‘i Coral inter-agency program, State of Hawai‘i  
2019 Committee Member; Competing Interests Committee, National Academy of Sciences  
2019-present Sustainability Speaker, Washington Speakers Bureau, Washington DC  
2020 Co-Author; Campaign for Nature, <https://www.campaignfornature.org/protecting-30-of-the-planet-for-nature-economic-analysis>  
2020 Plenary; Future Use of NASA Airborne Platforms to Advance Earth Science Priorities; NASEM; 29-31Jul20  
2020 Plenary, Global Biodiversity, Planet Explore 2020 15Oct20  
2021 Keynote Speaker, Hawai‘i Sustainability Summit, 15Mar21  
2021 Speaker, Transportation and Infrastructure Roundtable for Hawai‘i. U.S. House of Representatives Sub-committee on Transportation and Infrastructure, 1Apr21.  
2021 Session Chair and Speaker, International Coral Reef Symposium, Bremen, Germany  
2021 Member, State of Hawaii Coral Reef Restoration Science Team  
2021 Invited Audience, Pope Francis at the Vatican, 25Aug21  
2021 Invited Speaker, NOAA Office of Law Enforcement, 26Oct21  
2021 Invited Speaker, TEDx Hawai‘i, 13Nov21  
2022 Invited Keynote, Laudato Si, Vatican, Rome, 23May22  
2022 Co-author, Ecosystem Status Report for Hawai‘i. NOAA Pacific Islands Fisheries  
2022-present Member, Hawai‘i Reef Restoration Science Team. NOAA Pacific Islands Fisheries  
2023-present Search Committee Member, Bermuda Institute of Ocean Sciences Directorship  
2023-present Personnel Committee, ASU School of Ocean Futures  
2023-present Promotion and Tenure Committee, ASU School of Ocean Futures  
2023-present Member, Personnel Committee, ASU School of Ocean Futures  
2023-present Member, Promotion and Tenure Committee, ASU School of Ocean Futures  
2023-2024 Expert Witness on Climate and the Environment, Navahine vs. Hawai‘i Department of Transportation Climate Change Mitigation Lawsuit  
2024 Invited Speaker, State of Hawai‘i Legislature, Briefing on Coral Reefs, Honolulu HI  
2024- Member, Science Advisory Board, OneReef  
2024 Session Chair for Cultural Heritage and Restoration, Reef Futures Conference, Cancun, MX  
2024- Member, Global Coral Biorepository Task Force, Revive & Restore Program

## V. Academic Advising

*Primary Graduate Student Advisees: 30*

*Other Graduate Student Committees: 35*

*Postdoctoral Researcher Advisees: 43*

### ***Primary Graduate Student Advisees***

*Name (year, degree), last known employer*

David Lobell (2003, PhD), Stanford U.	Roberta Martin (2003, PhD), ASU
Thomas Harris (2003, MS), Planet Inc.	Charles Wheeler (2004, MS), U. Arizona
Timothy Varga (2007, MS), Climate Pol. Inst.	John Clark (2009, MS), Google Inc.
Matthew Colgan (2012, PhD), Blue River Tech	Kyla Dahlin (2012, PhD), Michigan State U.
Eben Broadbent (2013, PhD), U. Florida	Angelica Almeyda (2013, PhD), U. Florida
Kelly McManus (2016, PhD), Stanford U.	Dana Chadwick (2016, PhD), JPL
Christa Anderson (2018, PhD), WWF	Rebecca Niemiec (2018, PhD), Colorado State U.

Elsa Ordway (2018, PhD), UCLA  
Nicholas Johnson (2019, MA), ASU  
Rachel Engstrand (2021, PhD), Pachama  
Bryant Grady (2022, MA), TNC  
Megs Seeley (2023, PhD), ASU  
Kelly van Woesik (MA), NC State U.  
Dominica Harrison (In progress, PhD), ASU  
McKenna Allen (In progress, MS)

Emily Francis (2019, PhD), Univ of Texas  
Randy Fulford (2019, MA), ASU  
Rachel Carlson (2022, PhD), UC Berkeley  
Kim Fuller (2022, MA), Hawaii Div. Aq. Res.  
Victoria Sember (2023, MA), Northeastern U.  
Kailey Pascoe (In progress, PhD), ASU  
Mia Melamed (In progress, MS)  
Teagan Roome (In progress, PhD)

### ***Post-doctoral Research Scientist Advisees***

*Name (years in lab), last known employer*

Sharon Hall (1999-01), ASU  
Lydia Olander (2003-04), Duke U.  
Roberta Martin (2004-06), ASU  
Maoyi Huang (2005-08), Pacific NW Nat. Lab.  
Chris Doughty (2008-10), Northern Arizona U.  
Scott Loarie (2008-10), Cal Acad. of Sciences  
Joseph Mascaro (2010-13), Planet Inc.  
Nick Vaughn (2012-13), ASU  
Claire Baldeck (2012-15), Yale U.  
David Marvin (2014-2016), Planet Inc.  
Tarin Paz-Kagan (2016-2017), U. Tel Aviv  
Andrew Davies (2014-2019), Harvard U.  
James Askew (2018-2019), U. of S. California  
Philip Brodrick (2016-2019), JPL  
Luke Evans (2016-2020), U. of Florida  
Fredrick Draper (2016-2021), U. of Leeds  
Shawna Foo (2018-2021), U. Sydney  
Adrian Pascual (2020-2021), U. Maryland  
Ana Gabriela Bonelli (2021-2023)  
Elahe Jamalnia (2022-2023), Landi Corp.  
Kelly Hondula (2022-)  
Jasper Oshun (2024-)

Jeffrey Hicke (2000-03), U. Idaho  
Andrew Elmore (2003-04), U. Maryland  
Natalie Boelman (2005-06), Columbia U.  
Choying Huang (2006-08), Taiwan Nat U.  
Shaun Levick (2008-10), CSIRO, Australia  
Jim Kellner (2008-11), Brown U.  
Jean-Baptiste Féret (2010-13), U. Montpellier  
Mark Higgins (2011-14), USAID  
Paulo Brando (2013-15), Woods Hole  
Jomar Barbosa (2014-2016), U. of Madrid  
Dana Chadwick (2016-2017), JPL  
Chris Balzotti (2015-2018), The Nature Cons.  
Pramukta Kumar (2018-2019), DG Inc.  
Ovidiu Csillik (2018-2019), Wageningen U.  
Yaping Xu (2019-2020), U. of Tennessee  
Jiwei Li (2018-2021), ASU  
Yujia Zhang (2020-2021), ASU  
Jie Dai (2021-2023), ASU  
Rachel Mason (2022-2023)  
Marcel König (2022-2023), MPI  
Grace Klinges (2024-)

### ***Student Committees Other Than Major Advisor***

***Arizona State Univ:*** William Green, Thomas Ingalls

***Stanford Univ:*** Toby Ahrens, Michael Beman, Kate Brauman, Claire Lunch, Stephen Porder

***Univ Colorado:*** Laura Belanger, Jon Carrasco, Cory Cleveland, Kathleen Farley, Nancy Golubiewski,  
David Kinner, David Mixon, Jennifer Mengan, Khatib Nader, Amanda Warner

***Univ Arizona:*** Dawn Browning

***Colorado State Univ:*** Lara Prihodko

***Univ Brasilia:*** Ana Paula Ferreira de Carvalho, Zayra do Prado

***Univ Florida:*** Ane Alencar

***Univ Paris:*** Jean-Baptiste Féret, Lena Maatoug

***Univ Grenoble:*** Guillaume Tochon

***Univ Pretoria:*** Russell Main, Laven Naidoo

***Univ Witwatersrand:*** Penelope Mograbi

***Univ San Marcos-Peru:*** Felipe Sinca, Raul Tupayachi

***Yale Univ:*** Kim Carlson

## VI. Peer-reviewed Publications

*Google Scholar H-index:* 153 (2024)

### **1996-1999**

1. Asner, G.P. and S.W. Beatty. 1996. Effects of an African grass invasion on Hawaiian shrubland nitrogen biogeochemistry. *Plant and Soil* 186:205-211.
2. Asner, G.P., T.R. Seastedt, and A.R. Townsend. 1997. The decoupling of terrestrial carbon and nitrogen cycles. *BioScience* 47:226-234.
3. Asner, G.P. and G. Goldstein. 1997. Correlating stem biomechanical properties of Hawaiian canopy trees with hurricane wind damage. *Biotropica* 29:145-150.
4. Asner, G.P. and C.A. Wessman. 1997. Scaling PAR absorption from the leaf to landscape level in spatially heterogeneous ecosystems. *Ecological Modelling* 103:81-97.
5. Asner, G.P., C.A. Wessman, and J.L. Privette. 1997. Unmixing the directional reflectances of AVHRR sub-pixel landcovers. *IEEE Transactions on Geoscience and Remote Sensing* 35:868-878.
6. Asner, G.P., B.H. Braswell, D.S. Schimel, and C.A. Wessman. 1998. Ecological research needs from multi-angle remote sensing data. *Remote Sensing of Environment* 63:155-165.
7. Asner, G.P. 1998. Biophysical and biochemical sources of variability in canopy reflectance. *Remote Sensing of Environment* 64:234-253.
8. Asner, G.P., C.A. Wessman, and S. Archer. 1998. Scale dependence of absorption of photosynthetically active radiation in terrestrial ecosystems. *Ecological Applications* 8:906-925.
9. Wessman, C.A. and G.P. Asner. 1998. Ecosystems and the problems of large-scale measurements. Successes, Limitations, and Frontiers in Ecosystem Ecology. P. Groffman and M. Pace (eds.) Springer-Verlag, Berlin.
10. Asner, G.P., C.A. Wessman, D.S. Schimel, and S. Archer. 1998. Variability in leaf and litter optical properties: implications for canopy BRDF model inversions using AVHRR, MODIS, and MISR. *Remote Sensing of Environment* 63:200-215.
11. Asner, G.P., C.A. Wessman, and D.S. Schimel. 1998. Heterogeneity of savanna canopy structure and function from imaging spectrometry and inverse modeling. *Ecological Applications* 8:926-941.
12. Asner, G.P., C.A. Bateson, J.L. Privette, N. Z. El Saleous, and C.A. Wessman. 1998. Vegetation structural effects on carbon uptake using satellite data fusion and inverse modeling. *Journal of Geophysical Research* 103:28839-28853.
13. Mesarch, M.A., E.A. Walter-Shea, G.P. Asner, E.M. Middleton, and S.S. Chan. 1999. A revised measurement methodology for conifer needle spectral optical properties. *Remote Sensing of Environment* 68:177-192.
14. Asner, G.P., A.R. Townsend, and M.C.M. Bustamante. 1999. Spectrometry of pasture condition and biogeochemistry in the Central Amazon. *Geophysical Research Letters* 26:2769-2772.
15. Diner, D.J., G.P. Asner, R. Davies, J.-P. Muller, B. Pinty, C.B. Schaaf, and J. Stroeve. 1999. New directions in Earth observing: scientific applications of multiple-view-angle remote sensing. *Bulletin of the American Meteorological Society* 80 (11):2209-2228.

### **2000-2002**

16. Bateson, C.A., G.P. Asner, and C.A. Wessman. 2000. Endmember bundles: A new approach to incorporating endmember variability in spectral mixture analysis. *IEEE Transactions on Geoscience and Remote Sensing* 38:1083-1094.

17. White, M.A., G.P. Asner, R.R. Nemani, J.L. Privette, and S.W. Running. 2000. Monitoring fractional cover and leaf area index in arid ecosystems: digital camera, radiation transmittance, and laser altimetry results. *Remote Sensing of Environment* 74:45-57.
18. Privette, J.L., G.P. Asner, F. Huemmrich, et al. 2000. The Prototype Validation Exercise (PROVE) for EOS land and atmosphere products. *Remote Sensing of Environment* 74:1-12.
19. Asner, G.P., C.A. Wessman, C.A. Bateson, and J.L. Privette. 2000. Impact of tissue, canopy and landscape factors on reflectance variability of arid ecosystems. *Remote Sensing of Environment* 74:69-84.
20. Asner, G.P. and D.B. Lobell. 2000. A biogeophysical approach for automated SWIR unmixing of soils and vegetation. *Remote Sensing of Environment* 74:99-112.
21. Asner, G.P. 2000. Contributions of multi-view angle remote sensing to land surface and biogeochemical research. *Remote Sensing Reviews* 18:137-162.
22. Asner, G.P., A.R. Townsend, and B.H. Braswell. 2000. Satellite observation of El Niño effects on Amazon forest phenology and productivity. *Geophysical Research Letters* 27:981-984.
23. Asner, G.P., A.R. Townsend, W. Riley, P.A. Matson, J.C. Neff, and C.C. Cleveland. 2001. Physical and biogeochemical controls of terrestrial ecosystems responses to nitrogen deposition. *Biogeochemistry* 54:1-39.
24. Neff, J.C. and G.P. Asner. 2001. Dissolved organic carbon in terrestrial ecosystems: synthesis and model. *Ecosystems* 4:29-48.
25. Lobell, D.B., G.P. Asner, B. Law, R. Treuhaft. 2001. Sub-pixel canopy cover estimation of coniferous forest using SWIR imaging spectrometry. *Journal of Geophysical Research* 106:5151-5160.
26. Asner, G.P. 2001. Cloud cover in Landsat observations of the Brazilian Amazon. *International Journal of Remote Sensing* 22:3855-3862.
27. Asner, G.P. and R.O. Green. 2001. Imaging spectroscopy measures desertification in the Southwest U.S. and Argentina. *EOS Transactions* 82(49):601-606.
28. Asner, G.P., M. Keller, R. Pereira, and J. Zweede. 2002. Remote sensing of selective logging in Amazônia: Assessing limitations based on detailed field measurements, Landsat ETM+ and textural analysis. *Remote Sensing of Environment* 80(3):483-496.
29. Lobell, D.B., G.P. Asner, B. Law, R. Treuhaft. 2002. View angle effects on canopy reflectance and spectral mixture analysis of coniferous forests using AVIRIS. *International Journal of Remote Sensing* 23:2247-2262.
30. Lobell, D.B. and G.P. Asner. 2002. Moisture effects on soil reflectance. *Soil Science Society of America Journal* 66:722-727.
31. Asner, G.P. and K.B. Heidebrecht. 2002. Spectral unmixing of vegetation, soil and dry carbon in arid regions: Comparing multi-spectral and hyperspectral observations. *International Journal of Remote Sensing* 23:3,939-3,958.
32. Treuhaft, R.N., G.P. Asner, B.E. Law, and S. Van Tuyl. 2002. Forest leaf area density profiles from the quantitative fusion of radar and hyperspectral data. *Journal of Geophysical Research* 107:4568 doi:10.1029/2001JD000646
33. Lobell, D.B., G.P. Asner, I. Ortiz-Monasterio, and T. Benning. 2002. Remote sensing of regional crop production in the Yaqui Valley, Mexico: Estimates and uncertainties. *Agriculture, Ecosystems and Environment* 94(2):205-220.
34. Asner, G.P., M. Palace, M. Keller, R. Pereira Jr., J.N.M. Silva, and J.C. Zweede. 2002. Estimating canopy structure in an Amazon forest from laser rangefinder and IKONOS satellite observations. *Biotropica* 34:483-492.
35. Hicke, J.A., G.P. Asner, J. Randerson, S. Los, S. Birdsey, C.J. Tucker, and C.B. Field. 2002. Changes in North American net primary production, 1982-1998. *Geophysical Research Letters* 29:69-73.
36. Hicke, J.A., G.P. Asner, J.T. Randerson, S. Los, R. Birdsey, J.C. Jenkins, C.J. Tucker, and C.B. Field. 2002. Trends in North American net primary productivity derived from satellite observations, 1982-1998. *Global Biogeochemical Cycles* 16 doi:10.1029/2001GB001550.



37. Townsend, A.R., G.P. Asner, C.C. Cleveland, M. Lefer, and M.M.C. Bustamante. 2002. Unexpected changes in soil phosphorus dynamics following forest-to-pasture conversion in the humid tropics. *Journal of Geophysical Research* 107:8,067-8,076.
38. Pereira, R., J. Zweede, G.P. Asner, and M. Keller. 2002. Forest canopy damage from conventional and reduced impact selective logging in Eastern Amazon, Brazil. *Forest Ecology and Management* 168:77-89.
39. Townsend, A.R., G.P. Asner, P.P. Tans, and J.W.C. White. 2002. Land use effects on atmospheric <sup>13</sup>C imply a sizable terrestrial CO<sub>2</sub> sink in tropical latitudes. *Geophysical Research Letters* 29 doi:10.1029/2001GL013454.
40. Lobell, D.B., J.I. Ortiz-Monasterio, C.L. Addams, and G.P. Asner. 2002. Soil, climate and management impacts on regional agricultural productivity. *Agricultural and Forest Meteorology* 114:31-43.
41. Lobell, D.B., J.A. Hicke, G.P. Asner, C.B. Field, C.J. Tucker, and S. O. Los. 2002. Satellite estimates of productivity and light use efficiency in United States agriculture, 1982-1998. *Global Change Biology* 8:722-735.

### 2003-2005

42. Asner, G.P., J.M.O. Scurlock, and J.A. Hicke. 2003. Global synthesis of leaf area index observations: Implications for ecological and remote sensing studies. *Global Ecology and Biogeography* 12:195-205.
43. Hicke, J.A., G.P. Asner, E.S. Kasishke, N.H.F. French, J.T. Randerson, G.J. Collatz, B.J. Stocks, C.J. Tucker, S.O. Los, C.B. Field. 2003. Postfire response of North American boreal forest net primary productivity. *Global Change Biology* 9:1145-1157.
44. Zavaleta, E.S., B.D. Thomas, N.R. Chariello, G.P. Asner, M.R. Shaw, and C.B. Field. 2003. Plants reverse warming effect on ecosystem water balance. *Proceedings of the National Academy of Sciences* 100:9892-9893.
45. Asner, G.P., S.A. Archer, R.F. Hughes, J.N. Ansley, and C.A. Wessman. 2003. Net changes in regional woody vegetation cover and carbon storage in North Texas rangelands, 1937-1999. *Global Change Biology* 9:316-335.
46. Lobell, D.B. and G.P. Asner. 2003. Climate and management contributions to recent trends in U.S. agricultural yields. *Science* 299:1032.
47. Lobell, D.B. and G.P. Asner. 2003. Comment on climate and management contributions to recent trends in U.S. agricultural yields. *Science* 300:1505.
48. Asner, G.P., C. Borghi, and R. Ojeda. 2003. Desertification in Central Argentina: Regional changes in ecosystem carbon-nitrogen. *Ecological Applications* 13:629-648.
49. Harris, A.T., G.P. Asner, and M.E. Miller. 2003. Changes in vegetation structure following long-term grazing in pinyon-juniper ecosystems. *Ecosystems* 6:368-383.
50. Martin, R.E., G.P. Asner, R.J. Ansley, and A.R. Mosier. 2003. Effects of woody vegetation encroachment on soil nitrogen oxide emissions in a temperate savanna. *Ecological Applications* 13:897-910.
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931. Jamalnia, E., J. Dai, N. Vaughn, K. Hondula, M. Konig, J. Heckler, and G. Asner. 2023. Application of imaging spectroscopy to quantify fractional cover over agricultural lands. IEEE International Geoscience and Remote Sensing Symposium, Pasadena, CA.
932. Whitney, J., J. Gove, J. Burns, G. Asner, et al. 2024. Molecules to ecosystems: Exploring whole-reef biodiversity and fish ecology with integrated eDNA, visual and remote sensing surveys in Hawai'i. AGU Ocean Sciences, New Orleans, LA.
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### **VIII. Open Access Peer-reviewed Data (examples)**

934. Davies, A.B., S.R. Levick, M.P. Robertson, B.J. van Rensburg, G.P. Asner, and C.L. Parr. 2015. Termite mounds differ in their importance for herbivores across savanna types, seasons and spatial scales [Data set]. <https://doi.org/10.5061/dryad.b0b1c>
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936. Barbosa, J.M. G.P. Asner. 2016. Prioritizing landscapes for restoration based on spatial patterns of ecosystem controls and plant-plant interactions [Data set] <https://doi.org/10.5061/dryad.n0cf5>
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939. Caughlin, T.T., S.J. Graves, G.P. Asner, M. van Breugel, J.S. Hall, R.E. Martin, M.S. Ashton, and S.A. Bohlman. 2016. A hyperspectral image can predict tropical tree growth rates in single-species stands [Data set]. <https://doi.org/10.5061/dryad.t6md2>
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## **IX. Books**

960. DeFries, R., G.P. Asner, and R.A. Houghton. 2004. *Ecosystems and Land Use Change*. American Geophysical Union, Washington, DC. 344 pp.
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## **X. Book Reviews**

962. Asner, G.P. 2000. *Plato's Plant: On the Mathematical Structure of Plants and Canopies*, by F. Schieving, Backhuys Publishers, Leiden. *The Quarterly Review of Biology*.
963. Asner, G.P. 2002. *The Cutting Edge: Conserving Wildlife in Logged Tropical Forests*, by R.A. Fimbel et al., Columbia Press, New York. *The Quarterly Review of Biology*.

## **XI. Patents**

*Remote Sensing Analysis of Forest Disturbances*; United States Patents 8189877, 20090214084, 20120288159-A1 and 20130216103; International Classification G06K9/62; Expiration: May 21, 2028. Patent applies to a general methodology for monitoring any forest disturbances with satellite imagery. The patents protect the Carnegie Landsat Analysis System (CLAS), Carnegie Landsat Analysis System-Lite (CLASlite), Automated Monte Carlo Unmixing (AutoMCU), and Multispectral and Hyperspectral Libraries. The invention can be used to monitor any type of forest disturbance or degradation including selective logging, agricultural expansion, cattle ranching, and natural hazards such as fire and windstorms.

## **XII. Professional Organizations**

American Geophysical Union  
Association for Tropical Biology and Conservation  
Ecological Society of America  
International Coral Reef Society  
Organization for Tropical Studies  
U.S. National Academy of Sciences

## **XIII. Documentary Film Appearances**

Keeper of the Bay (2023)  
The Letter with Pope Francis (2022)  
Changing Ocean (2022)  
Reef Rescue (2021)  
A Perfect Planet (2021)  
Saving Earth from the Sky (2020)  
H<sub>2</sub>O: The Molecule That Made Us (2020)  
Judi Dench's Wild Borneo Adventure (2019)  
Decoding the Weather Machine (2018)

River of Gold (2016)  
The Rainforests are Under Threat (2015)  
The Tipping Points (2013)  
Strange Days on Planet Earth (2005)

#### **XIV. Examples of Mass Media Coverage**

Honolulu Civil Beat, "[Hawaii's love affair with cesspools is ruining its reefs](#)", 20Nov24  
Yahoo News, "[Researchers kick off monumental restoration project after witnessing devastating event](#)", 14Jul24  
KHON2, "[Forecasting our Future | Empowered Hawai'i](#)", 2Jul24  
Reuters, "[Brazil braces for worst coral bleaching ever](#)", 17Apr24  
Hawaii Business Magazine, "[Cesspools are killing Hawaii's corals – but it doesn't have to be that way](#)", 25Sep23  
Wired, "[The weird way that human waste is killing corals](#)", 9Aug23  
Forbes, "[Tourists are loving Hawaii's coral reefs to death](#)", 16Jan23  
BBC News, "[Oil pollution: Investigation reveals Egypt's 'super coral' at risk](#)", 16Nov22  
Nature, "[The last stand in the Amazon](#)", 5Oct22  
Hana Hou Magazine, "[Science of the People](#)", 10Oct22  
Variety, "[Pope Francis YouTube Doc 'The Letter: A Message for Our Earth' launches from Vatican City](#)", 4Oct22  
Popular Science, "[These Hawaiian corals could hold the secret to surviving warming waters](#)", 3May22  
New Scientist, "[Corals further from pollution were more resistant to Hawaiian heatwave](#)", 2May22  
Mongabay, "[Can we save coral reefs?](#)", 4Mar22  
Wired Magazine, "[Missing forests are messing with climate targets](#)", 30Oct21  
World Economic Forum, "[First-ever high-resolution map of world's coral reefs is complete](#)", 15Sep21  
Smithsonian Magazine, "[Scientists complete the first map of the world's coral reefs](#)", 10Sep21  
U.S. News and World Report, "[Researchers complete first-ever detailed map of global coral](#)", 8Sep21  
Smithsonian Magazine, "[Endangered wild dogs rely on diverse habitat to survive around lions](#)", 30Aug21  
Vatican News, "[Laudato Si' - science offers faith tools amid climate crisis](#)", 25Aug21  
The Economist, "[Mass extinction: What can stop it?](#)", 2Jul21  
The Chopra Well, "[Reinventing humanity: The connection between ecological, personal, social and planetary wellbeing](#)", 29Jun21  
The Economist, "[All kinds of new technology are being used to monitor the natural world](#)", 19Jun21  
Popular Science, "[These tricked out planes could help save coral reefs from untimely deaths](#)", 1Jun21  
The Guardian, "[Scientists launch tool to detect bleaching of coral reefs in near real time](#)", 19May21  
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