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I study ecosystems in the context of global change. My research, teaching and capacity-building work includes spatial ecology, biogeochemistry, functional biogeography and ecology, animal-habitat interactions, invasive species, land use, and climate change. I develop new approaches for large-scale ecological studies and conservation assessments of carbon emissions, biogeochemical cycles, biological diversity and ecosystem responses to climate change. I lead the CLASlite forest monitoring and training program, Spectranomics biodiversity project, and the Carnegie Airborne Observatory.

Professional Academic Experience

2001 - Staff Scientist, Global Ecology, Carnegie Institution for Science
2007 - Professor (courtesy), Environmental Earth System Science, Stanford University
2005 - 2007 Assoc Professor (courtesy), Geological & Environmental Sciences, Stanford University
2001 - 2005 Asst Professor (courtesy), Geological & Environmental Sciences, Stanford University
1999 - 2001 Asst Professor, Geological Sciences & Environmental Studies, University of Colorado
1998 - 1999 Postdoctoral Fellow, Stanford University
1996 - 1998 Visiting Scientist, National Center for Atmospheric Research

Education

1991 B.S., Engineering, University of Colorado at Boulder
1995 M.S., Geography, University of Colorado at Boulder
1997 Ph.D., Biology, University of Colorado at Boulder

Honors and Awards

- Fellow of American Geophysical Union, 2015
- IFOF Amelia Earhart Honoree in Aviation, 2015
- U.S. National Academy of Sciences, Inducted 2014
- Nominet Trust 100 for Social Innovation, 2014
- Association for American Geographers Outstanding Contributions Award, 2014
- Avatar Alliance Foundation Award, 2013, 2014
- Stanford Energy and Environment Affiliates Program Award 2011, 2012
- Popular Science Magazine's Brilliant Ten Award, 2007
- Breakthrough of the Year, Science Magazine, 2006
- Presidential Early Career Award for Scientists and Engineers (Clinton Administration), 2000
- 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, 1994
- University of Colorado Fellowship Award, 1993-1995
- United States Navy Academic Scholarship, 1987-1991

National & International Service

Current Activities

2007-present	Director; Carnegie Airborne Observatory; Supporting hundreds of research projects in multiple countries; Data provision to the international community
2008-present	Director; CLASlite Forest Monitoring and Training Program; Providing coursework in forest change mapping in support of carbon emissions reduction strategies; More than 2100 organizations in 132 countries trained as of June 2015
2008-present	Advisor; Science and technology for the Peruvian Ministry of Environment
2008-present	Working Group Member; NASA HypsIRI satellite concept development team
2010-present	Editorial Board; <i>Remote Sensing of Environment</i>
2013-present	Advisory Board; Amazon Aid Foundation
2015-present	Editorial Board; <i>Proceedings of the National Academy of Sciences</i>

Examples of Past Service (major contributions in bold)

1996-1997	Science Team; NASA Lewis & Clark Mission
1998	Panelist; NASA Triana Mission
1998-2008	Panelist; NASA Large-scale Biosphere-Atmosphere Experiment in Amazônia Program
1998	Co-chair; International Forum on BRDF Remote Sensing
1998-2014	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 Amazônia
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	Member; Land-use Committee; Ecological Society of America
2000	Panelist; The Heinz Center
2001-2014	Panelist; National Science Foundation
2001	Panelist; Visions Working Group for Decadal Strategic Plan; NASA
1998	Panelist; Climate and Global Change Program; NOAA
2002	Panelist; Terrestrial Ecology Program; NASA
2002	Panelist; New Investigator Program; NASA
2003	Co-organizer; Chapman Conference “Ecosystem Interactions with Land-use Change”; American Geophysical Union
2003	Steering committee; International Symposium on Remote Sensing; Honolulu, HI
2003	Panel chair; Terrestrial Ecology Program; NASA
2003	Panel chair; NASA Northern Eurasia Environmental Science Program Initiative (NEESPI), Yalta, Ukraine
2003-2007	Scientific Steering Committee; Large-scale Biosphere-Atmosphere Experiment in Amazonia Program; NASA and Brazilian government
2003-2006	Scientific Steering Group; U.S. Carbon Cycle Program
2004	Panelist; Carbon Cycle and Ecosystems Review; NASA
2004-2006	Habitat Change Rapid Response Team; Ecological Society of America
2005	Panelist; Rural Days Conference; The World Bank
2005	Committee for Environmental Research and Education; NSF
2005-2009	NASA Senior Review Committee (Chair, 2007-2009)

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

2005 Search committee; Institute for Pacific Islands Forestry; USDA Forest Service

2005 Panelist; North American Carbon Program; NASA

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

2006 Panel chair; North American Carbon Program; NASA

2006 Panel chair; Terrestrial Ecology Program; NASA

2006-2007 Lead author; Livestock in a Changing Landscape program; United Nations

2007 Lead author; FLORA satellite mission concept; National Academy Decadal Survey

2007 Instructor; ASP Colloquium; National Center for Atmospheric Research

2007 Co-author; Plant Physiology and Functional Types Working Group; NASA

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

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

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

2008-2011 Steering Committee; bioDISCOVERY Program, Diversitas International

2009-2013 Lead; CLASlite in 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 Pacific Domain Science and Education Coordination Committee; NSF NEON

2009-present Author; GOF-C-GOLD SourceBook on deforestation and degradation

2009 Panelist; US Congressional panel on satellite monitoring of deforestation

2009 Delegate; UN Framework Convention on Climate Change COP-15, Copenhagen

2010 Steering committee; Center for Tropical Forest Science, Smithsonian

2010 Panelist; International Plant Biology Symposium, Harvard University

2010 Co-Author; UN FAO Historical Forest Degradation

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

2010-2013 Working group member, Reduced Emissions from Deforestation and Degradation (REDD), Governors' Climate and Forests (GCF) Task Force, State of California

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

2010 Lead; Global Terrestrial Ecosystem Observatory (GTEO); NASA Earth Ventures

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

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

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

2012 Special issue editor; Biodiversity; *Remote Sensing* journal

2012 Lead; Land Ecosystem Assessment & Forecast mission; NASA Earth Ventures

2012 Panelist; Forest Carbon Partnership Facility; World Bank

2012 Panelist; Latin American Development Bank

2012 SilvaCarbon Working Group; USAID

2013 Panelist; Prince's Rainforest Project; London

2013 Lead; Linnaeus mission concept; NASA Earth Ventures

Academic Mentoring

Graduate students

Name (year, degree), subsequent or current employer

David Lobell (2003, PhD), Stanford Univ	Roberta Martin (2003, PhD), Carnegie Institution
Thomas Harris (2003, MS), Excelis Corp.	Charles Wheeler (2004, MS), Univ Arizona
Timothy Varga (2007, MS), Climate Pol. Inst.	John Clark (2009, MS), Skybox Imaging
Matthew Colgan (2012, PhD), Univ Florida	Kyla Dahlin (2012, PhD), Michigan State University
Kim Carlson (2012, PhD), Univ Hawaii	Eben Broadbent (2013, PhD), Univ Alabama
Angelica Almeyda (2013, PhD), Univ Alabama	Penny Mograbi (2014, MS), Univ Witwatersrand
K. Dana Chadwick	Kelly McManus
Emily Francis	Rebecca Niemiec
Christa Anderson	

Post-doctoral advisees

Name (years in lab), subsequent or current employer

Sharon Hall (1999-01), Arizona State Univ	Jeffrey Hicke (2000-03), Univ Idaho
Lydia Olander (2003-04), Duke Univ	Andrew Elmore (2003-04), Univ Maryland
Roberta Martin (2004-06), Carnegie Institution	Natalie Boelman (2005-06), Columbia Univ
Maoyi Huang (2005-08), Pacific NW Laboratory	Cho-ying Huang (2006-08), Taiwan Nat Univ
Chris Doughty (2008-10), Oxford Univ	Shaun Levick (2008-10), Max Planck Institute
Scott Loarie (2008-10), Cal Academy of Sciences	Jim Kellner (2008-11), Brown Univ
Joseph Mascaro (2010-13), Planet Labs	Jean-Baptiste Féret (2010-13), U Montpellier
Nick Vaughn (2012-13), Carnegie Institution	Matt Colgan (2012-13), Blueriver Inc.
Mark Higgins (2011-14), World Resources Inst	Claire Baldeck (2012-)
Paulo Brando (2013-2015)	David Marvin (2014-)
Andrew Davies (2014-)	Jomar Barbosa (2014-)
Chris Balzotti (2015-)	Min Chen (2015-)

Other thesis committees

Stanford University:	Toby Ahrens, Michael Beman, Kate Brauman, Claire Lunch, Stephen Porder, Charlotte Stanton
Univ of Colorado:	Laura Belanger, Jon Carrasco, Kathleen Farley, Cory Cleveland, Nancy Golubiewski, Amanda Warner, Khatib Nader, David Kinner, David Mixon, Jennifer Mengan
Univ of Arizona:	Dawn Browning
Colorado State Univ:	Lara Prihodko
Univ of Brasília:	Ana Paula Ferreira de Carvalho, Zayra do Prado
Univ of Florida:	Ane Alencar
Univ of Paris:	Jean-Baptiste Féret, Lena Maatoug
Univ of Grenoble:	Guillaume Tochon
Univ of Pretoria:	Russell Main, Laven Naidoo
Univ of Witwatersrand	Penelope Mograbi
Univ of San Marcos-Peru	Raul Tupayachi, Felipe Sinca

Peer-reviewed Scientific Articles

Publication years prior to 2000

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.

Publication years 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 ¹³C imply a sizable terrestrial CO₂ 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.

Publication years 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. Chiariello, 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.
51. Treuhaft, R.N., G.P. Asner, and B.E. Law. 2003. Structure-based forest biomass from fusion of radar and hyperspectral observations. *Geophysical Research Letters* 30:1472-1476.
52. Asner, G.P. and K.B. Heidebrecht. 2003. Imaging spectroscopy for desertification studies: Comparing AVIRIS and EO-1 Hyperion in Argentina drylands. *IEEE Transactions on Geoscience and Remote Sensing* 41:135-155.
53. Lobell, D.B. and G.P. Asner. 2003. Comparison of Earth Observing-1 ALI and Landsat ETM+ for crop identification and yield prediction in Mexico. *IEEE Transactions on Geoscience and Remote Sensing* 41:128-134.
54. Harris, A.T. and G.P. Asner. 2003. Grazing gradient detection with airborne imaging spectroscopy on a semi-arid rangeland. *Journal of Arid Environments* 55:391-404.
55. Asner, G.P., M.M.C. Bustamante, and A.R. Townsend. 2003. Scale dependence of biophysical structure in deforested lands bordering the Tapajós National Forest, Central Amazon. *Remote Sensing of Environment* 87:507-520.

56. Asner, G.P. and A.S. Warner. 2003. Canopy shadow in IKONOS satellite observations of tropical forests and savannas. *Remote Sensing of Environment* 87:521-533.
57. Hurtt, G., X. Xiao, M. Keller, M. Palace, G.P. Asner, et al. 2003. IKONOS imagery for the Large Scale Biosphere-Atmosphere Experiment in Amazônia (LBA). *Remote Sensing of Environment* 88:111-127.
58. Asner, G.P., J.A. Hicke, and D.B. Lobell. 2003. Per-pixel analysis of forest structure: Vegetation indices, spectral mixture analysis and canopy reflectance modeling. *Methods and Applications for Remote Sensing of Forests: Concepts and Case Studies*. M. Wulder and S.E. Franklin (eds.) Kluwer Academic Publishers, New York.
59. Asner, G.P. 2004. Biophysical remote sensing signatures of arid and semi-arid regions. *Remote Sensing for Natural Resources, Management and Environmental Monitoring*. S. Ustin (ed.) John Wiley & Sons, New York.
60. Ustin, S.L., S. Jacquemoud, P.J. Zarco-Tejada, and G.P. Asner. 2004. Remote sensing of environmental processes: State of the science and new directions. *Remote Sensing for Natural Resources, Management and Environmental Monitoring*. S. Ustin (ed.) John Wiley & Sons, New York.
61. Ustin, S.L., D.A. Roberts, J.A. Gamon, G.P. Asner, and R.O. Green. 2004. Using imaging spectroscopy to study ecosystem processes and properties. *BioScience* 54:523-534.
62. Treuhhaft, R.N., B.E. Law, and G.P. Asner. 2004. Forest attributes from radar interferometric profiling and its fusion with optical data. *BioScience* 54:561-571.
63. Hall, S.J., G.P. Asner, and K. Kitayama. 2004. Land use, climate and substrate controls over soil nitrogen dynamics and N-oxide emissions in Borneo. *Biogeochemistry* 70:27-58.
64. Galloway, J., et al., G.P. Asner, et al. 2004. Regional and global N cycles: Past, present and future. *Biogeochemistry* 70:153-226.
65. Hicke, J.A., R.L. Sherriff, T.T. Veblen, and G.P. Asner. 2004. Carbon accumulation in Colorado ponderosa pine stands. *Canadian Journal of Forest Research* 34:1283-1295.
66. Asner, G.P., A.R. Townsend, M.M.C. Bustamante, G.B. Nardoto, and L.O. Olander. 2004. Pasture degradation in the Central Amazon: Linking carbon and nutrient dynamics with remote sensing. *Global Change Biology* 10:844-862.
67. Keller, M., M. Palace, G.P. Asner, R. Pereira Jr., and J.N.M. Silva. 2004. Coarse woody debris in undisturbed and logged forests in the Eastern Brazilian Amazon. *Global Change Biology* 10:784-795.
68. Asner, G.P., M. Keller, and J.N.M. Silva. 2004. Spatial and temporal dynamics of forest canopy gaps following selective logging in the eastern Amazon. *Global Change Biology* 10:765-783.
69. Lobell, D.B., I. Ortiz-Monasterio, and G.P. Asner. 2004. Relative importance of soil and climate variability for nitrogen management in irrigated wheat. *Field Crops Research* 87:155-165.
70. Defries, R., J. Foley, and G.P. Asner. 2004. Trade-offs from land-use change: Using ecological knowledge to balance human needs and ecosystem function. *Frontiers in Ecology and Environment* 2:249-257.
71. Boyer E.W., R.W. Howarth, J.N. Galloway, F.J. Dentener, C. Cleveland, G.P. Asner, P. Green, and C. Vörösmarty. 2004. Current nitrogen inputs to world regions. *Agriculture and the Nitrogen Cycle: Assessing the Impact of Fertilizer Use on Food Production and the Environment*. A.R. Mosier, K. Syers, and J.R. Freney (eds.) Island Press. Washington, DC.
72. Hicke, J.A., D.B. Lobell, and G.P. Asner. 2004. Cropland area and net primary production computed from 30 years of USDA agricultural harvest data. *Earth Interactions* 8:1-20.
73. Asner, G.P., A. Elmore, L. Olander, R.E. Martin, and A.T. Harris. 2004. Grazing systems, ecosystem responses and global change. *Annual Review of Environment and Resources* 29:261-299.
74. Asner, G.P. and K.B. Heidebrecht. 2004. Desertification alters ecosystem-climate interactions. *Global Change Biology* 10:1-13.
75. Lobell, D.B. and G.P. Asner. 2004. Cropland distributions from temporal unmixing of MODIS data. *Remote Sensing of Environment* 93:412-422.

76. Keller, M., G.P. Asner, J.N.M. Silva, and M. Palace. 2004. Sustainability of selective logging of upland forests in the Brazilian Amazon: Carbon budgets and remote sensing as tools for evaluation of logging effects. *Working Forests in the Tropics: Conservation through Sustainable Management?* D. Zarin, J. Alavalapati, F.E. Putz, M. Schmink (eds.) Columbia University Press, New York.
77. Houghton, R.A., F. Joos, G.P. Asner. 2004. The effects of land use and management on the global carbon cycle. *Land Change Science: Observing, Monitoring and Understanding Trajectories of Change on the Earth's Surface.* G. Gutman, A.C. Janetos, C.O. Justice et al. (eds.) Kluwer Academic Publishers, London.
78. Wessman, C.A., S. Archer, L.C. Johnson, and G.P. Asner. 2004. Woodland expansion in the US grasslands: Assessing land-cover change and biogeochemical impacts. *Land Change Science: Observing, Monitoring and Understanding Trajectories of Change on the Earth's Surface.* G. Gutman, A.C. Janetos, C.O. Justice et al. (eds.) Kluwer Academic Publishers, London.
79. Asner, G.P. and R.E. Martin. 2004. Biogeochemistry of desertification and woody encroachment in grazing systems. *Ecosystems and Land Use Change.* R. Defries, G.P. Asner, R.A. Houghton (eds.) American Geophysical Union, Washington, DC.
80. DeFries, R., G.P. Asner, and R.A. Houghton. 2004. Trade-offs in land use decisions: Towards a framework for assessing multiple ecosystem responses to land-use change. *Ecosystems and Land Use Change.* R. Defries, G.P. Asner, R.A. Houghton (eds.) American Geophysical Union, Washington, DC.
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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 is on a general methodology for monitoring any type of disturbance in forests with satellite imagery. Patent covers the Carnegie Landsat Analysis System (**CLAS**), Carnegie Landsat Analysis System-Lite (**CLASlite**), Automated Monte Carlo Unmixing (**AutoMCU**), and Multispectral/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 wind storms.

Professional Organizations

American Geophysical Union
American Association for the Advancement of Science
Association for Tropical Biology and Conservation
Ecological Society of America (lifetime member)
National Academy of Sciences of the United States of America (lifetime member)
Organization for Tropical Studies

Interesting Examples of Media Coverage

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