Metadata for Forward (Ecosystem) Model Intercomparison:
Site Model Data Comparison and Regional Model Data Comparison:
Survey Results

Replace with Summary Chart

Detailed results from 33 survey records:
16 Site Models, 10 Regional Models, 7 Both Site and Regional

Model	Inputs	Outputs
General Information	**Precipitation:**	**Gross Primary Productivity (GPP)**
Model ID/Extent: **4/Region**	Source: **CRU / NCEP**	Calc Method: **Enzyme Kinetic Model**
Model Acronym: **TEM**	Temporal:	Function(s) Used: **Air Temperature (Tair - Near surface temperature)**
Model Name: **Terrestrial Ecosystem Model**	**Temperature:**	**Soil Temperature (SoilTmp)**
Institution Name: **University of Alaska Fairbanks**	Source: **CRU / NCEP**	**Surface Incident Shortwave Radiation (SWDown)**
Institution URL: **http://picea.sel.uaf.edu/**	Temporal:	**Potential Evaporation (PotEvap)**
Contact Name: **A. David McGuire**	**Solar Radiation:**	**CO_2 (CO_2air)**
Contact E-mail: **ffadm@uaf.edu**	Source: **CRU / NCEP**	**Vegetation Carbon (TotLivCarb or some component)**
Cite as: **McGuire, A.D., S. Sitch, J.S. Clein, R. Dargaville, G. Esser, J. Foley, M. Heimann, F. Joos, J. Kaplan, D.W. Kicklighter, R.A. Meier, J.M. Melillo, B. Moore III, I.C. Prentice, N. Ramankutty, T. Reichenau, A. Schloss, H. Tian, L.J. Williams, and U. Wittenberg. 2001. Carbon balance of the terrestrial biosphere in the twentieth century: Analyses of CO2, climate and land-use effects with four process-based ecosystem models. Global Biogeochemical Cycles 15:183-206. Felzer, B., D. Kicklighter, J. Melillo, C. Wang, Q. Zhuang and R. Prinn (2004) Effects of ozone on net primary production and carbon sequestration in the conterminous United States using a biogeochemistry model. Tellus 56B, 230-248. Euskirchen, E. S., A. D. McGuire, D. W. Kicklighter, Q. Zhuang, J. S. Clein, R. J. Dargaville, D. G. Dye, J. S. Kimball, K. C. McDonald, J. M. Melillo, V. E. Romanovsky and N. V. Smith (2006) Importance of recent shifts in soil thermal dynamics on growing season length, productivity and carbon sequestration in terrestrial high-latitude ecosystems. Global Change Biology 12(4), 731-750, doi: 10.1111/j.1365-2486.2006.01113.x. Balshi, M. S., A. D. McGuire, Q. Zhuang, J. Melillo, D. W. Kicklighter, E. Kasischke, C. Wirth, M. Flannigan, J. Harden, J. S. Clein, T. J. Burnside, J. McAllister, W. A. Kurz, M. Apps and A. Shvidenko (2007) The role of historical fire disturbance in the carbon dynamics of the pan-boreal region: a process-based analysis. Journal of Geophysical Research 112, G02029, doi: 10.1029/2006JG000380.**	Source: **IGBP-DIS**	**Soil Moisture (SoilMoist)**
Spatial Information		Function(s) Used: **Subsurface Drainage**
Spatial Projection: **Lat Lon**		**Soil Texture (sand, silt, clay)**
Spatial Resolution: **0.5**		**Precipitation (Rain+Snow)**
Grid: **9,843**		**Specific Humidity (Qair)**
Upper Left Lat: **83**		**disregard Qair (accidental click that I can't seem to remove); AET**
Upper Left Lon: **-178**		
Lower Right Lat: **45**		
Lower Right Lon: **179.5**		
Temporal Information		
Model Begin Date: **2000-01-01**		
Model End Date: **2006-12-31**		
Carbon Information		
Dynamic Veg Pools: **1**		
Vegetation C (VEGC)		
Dynamic Soil Pools: **2**		
Soil Reactive C (SOILORGC)		
Dissolved Organic C (DOC)		
Static Soil Pools: **1**		
Deep Layer Soil C		

Steady State Span:	**-50000101 - 10001231**		
Steady State Initial:	**1001-01-01**		
Leaf Information			
Calc Method:	**Prognostic Canopy**		
Function(s) Used:	**Potential Evaporation (PotEvap)**		
	Vegetation Carbon (TotLivCarb or some component)		
	Other(s) (please specify):		
Soil Layer Information			
Soil Layers:	**2**		
	SNOWPACK		
	SOILH2O		
Soil Texture(s):	**Variable Texture**		
Disturbance Information			
Disturbances by Fires	**From Observations**		
Disturbances by Uses	**From Observations**		
Disturbances by Harvests	**From Observations**		
General Information		**Precipitation:**	**Gross Primary Productivity (GPP)**
Model ID/Extent:	**5/Region**	Source: **PRISM**	Calc Method: **Stomatal Conductance Model**
Model Acronym:	**MC1**	Temporal:	Function(s) Used: **Air Temperature (Tair - Near surface temperature)**
Model Name:	**MAPSS-CENTURY DYNAMIC GENERAL VEGETATION MODEL**	**Temperature:**	**Soil Temperature (SoilTmp)**
Institution Name:	**USDA Forest Service Pacific Northwest Research Station**	Source: **PRISM**	**Precipitation (Rain+Snow)**
Institution URL:	**www.fs.fed.us/pnw/corvallis/mdr/mapss**	Temporal:	**Soil Moisture (SoilMoist)**
Contact Name:	**Ronald P. Neilson**	**Humidity: (Relative, Specific, or Vapor Pressure Deficit)**	**Vapor Pressure Deficit**
Contact E-mail:	**rneilson@fs.fed.us**	Source: **PRISM**	**Actual Evaporation (Evap)**
Cite as:	**Bachelet, D., J.M. Lenihan, C. Daly, R.P. Neilson, D.S. Ojima, W.J. Parton. 2000. MC1: A dynamic vegetation model for estimating the distribution of vegetation and associated ecosystem fluxes of carbon, nutrients, and water. USDA General Technical Report PNW-GTR-508. 95 pp.**	Temporal:	**Potential Evaporation (PotEvap)**
Spatial Information		**Vegetation Distribution/Properties:**	**CO_2 (CO_2air)**
Spatial Projection:	**Lat Lon**	Type: **Dynamic**	**Vegetation Carbon (TotLivCarb or some component)**
Spatial Resolution:	**0.5**	Source: **Not Applicable (Dynamic)**	**Soil Nitrogen (TotSoilNit)**
Grid:	**5520**	**Soil Distribution/Properties:**	**Leaf Nitrogen (TotLeafNit)**
Upper Left Lat:	**49**	Source: **STATSGO**	**Heterotrophic Respiration (HeteroResp)**
Upper Left Lon:	**-124.5**		Calc Method: **Explicitly Calculated**
Lower Right Lat:	**25**		Function(s) Used: **Dissolved Inorganic/Organic Carbon Loss**
Lower Right Lon:	**-67**		**Soil Temperature (SoilTmp)**
Temporal Information			**Soil Moisture (SoilMoist)**
Model Begin Date:	**1895-01-01**		**Soil Carbon (TotSoilCarb or some component)**
Model End Date:	**2007-12-31**		**Soil Nitrogen (TotSoilNit)**
Carbon Information			**Autotrophic Respiration (AutoResp)**
Dynamic Veg Pools:	**7**		Calc Method: **Explicitly Calculated (e.g. SiBCASA)**
	grass shoots		Function(s) Used: **Air Temperature (Tair - Near surface temperature)**
	grass roots		**Leaf Nitrogen (TotLeafNit)**
	tree leaves		**Ecosystem Respiration (EcoResp=AutoResp+HeteroResp)**
	tree fine branches		Calc Method: **Autotropic Respiration+Heterotrophic Respiration (EcoResp)**
	tree coarse branches		**Net Primary Production (NPP)**
	tree fine roots		Calc Method: **GPP - Autotrophic Respiration**
	tree coarse roots		**Net Ecosystem Exchange (NEE)**
Steady State Initial:	**1895-01-01**		Calc Method: **NPP - Heterotropic Respiration**
Leaf Information			**Total Evapotranspiration (Evap)**
Calc Method:	**Annual Fraction of GPP/NPP**		Function(s) Used: **Air Temperature (Tair - Near surface temperature)**
Function(s) Used:	**Air Temperature (Tair - Near surface temperature)**		**Soil Temperature (SoilTmp)**
	Soil Temperature (SoilTmp)		**Precipitation (Rain+Snow)**
	Precipitation (Rain+Snow)		**Soil Moisture (SoilMoist)**
	Soil Moisture (SoilMoist)		**Vapor Pressure Deficit**
	Vapor Pressure Deficit		**Actual Evaporation (Evap)**
	Actual Evaporation (Evap)		**Potential Evaporation (PotEvap)**
	CO_2 (CO_2air)		**Soil Texture**
	Vegetation Carbon (TotLivCarb or some component)		**Soil Moisture (SoilMoist)**
	Soil Nitrogen (TotSoilNit)		Function(s) Used: **Surface Runoff**
	Leaf Nitrogen (TotLeafNit)		**Subsurface Drainage**
Soil Layer Information			**Organic Matter Content**
Soil Layers:	**10**		**Soil Texture (sand, silt, clay)**
			Precipitation (Rain+Snow)
			Vapor Pressure Deficit

	1-15 cm **16-30 cm** **31-45 cm** **46-60 cm** **61-90 cm** **91-120 cm** **121-150 cm** **151-180 cm** **181-210 cm** **211-240 cm** Soil Texture(s): **Variable Texture** **Carbon Dependent** **Disturbance Information** Disturbances by Fires **From Simulations**		**Actual Evaporation (Evap)**
General Information Model ID/Extent: **6/Site** Model Acronym: **LPJml** Model Name: **LPJ Managed Lands** Institution Name: **Potsdam Institute for Climate Impact Research** Institution URL: **www.pik-potsdam.de** Contact Name: **Ben Poulter** Contact E-mail: **ben.poulter@pik-potsdam.de** Cite as: **Gerten, D, S Schaphoff, U Haberlandt, W Lucht, and S Sitch. 2004. Terrestrial vegetation and water balance - hydrological evaluation of a dynamic global vegetation model. Journal of Hydrology 286:249-270. Sitch, S, B Smith, IC Prentice, A Arneth, A Bondeau, W Cramer, JO Kaplan, S Levis, W Lucht, MT Sykes, K Thonicke, and S Venevsky. 2003. Evaluation of ecosystem dynamics, plant geography and terrestrial carbon cycling in the LPJ dynamic global vegetation model. Global Change Biology 9:161-185.** **Temporal Information** Temporal Resolution: **Daily** Model Begin Date: **0000-00-00** Model End Date: **0000-00-00** **Carbon Information** Dynamic Veg Pools: **3** **Vegetation carbon** **Litter carbon** **Soil carbon** Dynamic Soil Pools: **2** **Intermediate** **Slow** Steady State Span: **10000101-19010101** **Leaf Information** Calc Method: **Prognostic Canopy** Function(s) Used: **Soil Moisture (SoilMoist)** **Vegetation Carbon (TotLivCarb or some component)** **Soil Layer Information** Soil Layers: **2** **Upper** **Lower** Soil Texture(s): **Variable Texture** **Disturbance Information** Disturbances by Fires **From Simulations** Disturbances by Uses **From Observations** Disturbances by Crops **From Observations** Disturbances by Harvests **From Simulations**	**(Regional Inputs NA)**	**Gross Primary Productivity (GPP)** Calc Method: **Stomatal Conductance Model** Function(s) Used: **Air Temperature (Tair - Near surface temperature)** **Precipitation (Rain+Snow)** **Soil Moisture (SoilMoist)** **Surface Incident Shortwave Radiation (SWDown)** **Actual Evaporation (Evap)** **Potential Evaporation (PotEvap)** **CO_2 (CO2air)** **fPAR** **Heterotrophic Respiration (HeteroResp)** Calc Method: **Explicitly Calculated** Function(s) Used: **Soil Temperature (SoilTmp)** **Soil Moisture (SoilMoist)** **Soil Carbon (TotSoilCarb or some component)** **Autotrophic Respiration (AutoResp)** Calc Method: **Explicitly Calculated (e.g. SiBCASA)** Function(s) Used: **Air Temperature (Tair - Near surface temperature)** **Soil Temperature (SoilTmp)** **Vegetation Carbon (TotLivCarb or some component)** **Ecosystem Respiration (EcoResp=AutoResp+HeteroResp)** Calc Method: **Autotropic Respiration+Heterotrophic Respiration (EcoResp)** **Net Primary Production (NPP)** Calc Method: **GPP - Autotrophic Respiration** **Net Ecosystem Exchange (NEE)** Calc Method: **NPP - Heterotropic Respiration** **Total Evapotranspiration (Evap)** Function(s) Used: **Air Temperature (Tair - Near surface temperature)** **Precipitation (Rain+Snow)** **Soil Moisture (SoilMoist)** **Surface Incident Shortwave Radiation (SWDown)** **Actual Evaporation (Evap)** **Potential Evaporation (PotEvap)** **Soil Moisture (SoilMoist)** Function(s) Used: **Surface Runoff** **Subsurface Drainage** **Irrigation** **Soil Texture (sand, silt, clay)** **Precipitation (Rain+Snow)** **Actual Evaporation (Evap)** **Potential Evaporation (PotEvap)**
General Information Model ID/Extent: **8/Region** Model Acronym: **MOD17** Model Name: **MODIS GPP/NPP algorithm (modified for Great Lakes Region)** Institution Name: **University of Minnesota**	**Temperature:** Source: **SOGS** Temporal: **Other (please specify):** **Humidity: (Relative, Specific, or Vapor Pressure Deficit)** Source: **SOGS** Temporal: **Other (please specify):**	**Gross Primary Productivity (GPP)** Calc Method: **Light Use Efficiency Model** Function(s) Used: **Air Temperature (Tair - Near surface temperature)** **Surface Incident Shortwave Radiation (SWDown)**

Institution URL:	**cheas.psu.edu**
Contact Name:	**Bruce Cook**
Contact E-mail:	**brucecook@umn.edu**
Cite as:	**Cook, B. D., P. V. Bolstad, F. A. Heinsch, K. J. Davis, W. Wang, R. M. Teclaw, and D. D. Baumann. Cloudiness and water table measurements improve MODIS GPP predictions in a shrub wetland. Journal of Geophysical Research (accepted). Cook, B. D., P. V. Bolstad, J. G. Martin, F. A. Heinsch, K. J. Davis, W. Wang, A. R. Desai, and R. M. Teclaw. 2008. Using light-use and production efficiency models to predict forest production and carbon exchange during canopy disturbance events. Ecosystems 11:26-44. Cook, B. D., P. V. Bostad, E. Næsset, R. S. Anderson, S. Garrigues, J. Morisette, J. Nickeson, and K. J. Davis. Using LiDAR and Quickbird data to model plant production and quantify uncertainties associated with wetland detection and land cover generalizations. Remote Sensing of Environment (accepted with revisions). Heinsch, F.A., M. Zhao, S.W. Running, J.S. Kimball, R.R. Nemani, K.J. Davis, P.V. Bolstad, B.D. Cook, A.R. Desai, D.M. Ricciuto, B.E. Law, W.C. Oechel, H. Kwon, H. Luo, S.C. Wofsy, A.L. Dunn, J.W. Munger, D.D. Baldocchi, L. Xu, D.Y. Hollinger, A.D. Richardson, P.C. Stoy, M.B.S. Siqeira, R.K. Monson, S. Burns, and L.B. Flanagan. 2006. Evaluation of remote sensing based terrestrial productivity from MODIS using AmeriFlux tower eddy flux network observations. IEEE Transactions on Geoscience and Remote Sensing 44:1908-1925.**
Spatial Information	
Spatial Projection:	**Lat Lon**
Spatial Resolution:	**30**
Upper Left Lat:	**46.53**
Upper Left Lon:	**-91.32**
Lower Right Lat:	**45.35**
Lower Right Lon:	**-88.9**
Temporal Information	
Temporal Resolution:	**Daily**
Model Begin Date:	**2001-01-01**
Model End Date:	**2007-12-31**
Leaf Information	
Calc Method:	**LAI Specified with Remotely Sensed Product**
Function(s) Used:	**Air Temperature (Tair - Near surface temperature)**
	Surface Incident Shortwave Radiation (SWDown)
	Vapor Pressure Deficit
	Vegetation Carbon (TotLivCarb or some component)
	LAI
	EVI
	NDVI
	fPAR
Disturbance Information	
Disturbances by Uses	**From Observations**
Disturbances by Disasters	**From Observations**
Disturbances by Harvests	**From Observations**
Disturbances by Pests	**From Observations**

Solar Radiation:	
Source:	**SOGS**
Temporal:	**Other (please specify):**
NDVI:	
Source:	**MODIS**
Temporal:	**Daily**
EVI:	
Source:	**MODIS**
Temporal:	**Daily**
LAI:	
Source:	**airborne LiDAR; empirical VI relationships; sub-canopy observations**
Temporal:	**8-day**
fPAR:	
Source:	**airborne LiDAR; empirical VI relationships; sub-canopy observations**
Temporal:	**8-day**
Vegetation Distribution/Properties:	
Type:	**Dynamic**
Source:	**IGBP (MOD12.Q1)**
Soil Distribution/Properties:	
Source:	**STATSGO**

	Vapor Pressure Deficit
	Vegetation Carbon (TotLivCarb or some component)
	LAI
	EVI
	NDVI
	fPAR
Autotrophic Respiration (AutoResp)	
Calc Method:	**Proportional to Growth**
Net Primary Production (NPP)	
Calc Method:	**GPP - Autotrophic Respiration**

General Information	
Model ID/Extent:	**9/Site**
Model Acronym:	**ecosys**
Model Name:	**ecosys**
Institution Name:	**Department of Renewable Resources, University of Alberta**

(Regional Inputs NA)

Gross Primary Productivity (GPP)	
Calc Method:	**Enzyme Kinetic Model**
Function(s) Used:	**Air Temperature (Tair - Near surface temperature)**
	Soil Moisture (SoilMoist)

Institution URL:	**http://www.ales.ualberta.ca/rr/**
Contact Name:	**Robert Grant**
Contact E-mail:	**robert.grant@ualberta.ca**
Cite as:	**Grant R.F., Arkebauer T.J., Dobermann A., Hubbard K.G., Schimelfenig T.T., Suyker A.E., Verma S.B. and Walters, D.T. 2007. Net biome productivity of irrigated and rainfed maize – soybean rotations: modelling vs. measurements. Agronomy Journal 99:1404-1423. Grant, R.F., Barr, A.G., Black, T.A. Iwashita, H. Kidson, J., McCaughey, H., Morgenstern, K., Murayama, S., Nesic, Z., Saigusa, N., Shashkov, A., and Zha, T., 2007. Net ecosystem productivity of boreal jack pine stands regenerating from clearcutting under current and future climates Global Change Biol. 13:1423-1440. Grant, R. F., and L. B. Flanagan. 2007. Modeling stomatal and nonstomatal effects of water deficits on CO2 fixation in a semiarid grassland, J. Geophys. Res. 112:G03011, doi:10.1029/2006JG000302. Grant, R.F., Black, T.A., Humphreys, E.R., and Morgenstern, K. 2007. Changes in net ecosystem productivity with forest age following clearcutting of a coastal Douglas fir forest: testing a mathematical model with eddy covariance measurements along a forest chronosequence. Tree Physiology. 27:115-131.**
Temporal Information	
Temporal Resolution:	**Other**
Other:	**internal time steps for water and gas exchange are smaller**
Model Begin Date:	**0000-00-00**
Model End Date:	**0000-00-00**
Carbon Information	
Dynamic Veg Pools:	**9**
	leaf
	twig, petiole or sheath
	bole or stem
	reproductive material
	seed
	non-structural reserves in bole or stem
	non-structural reserves in leaves
	roots
	non-structural reserves in roots
Dynamic Soil Pools:	**9**
	woody plant litter
	non-woody plant litter
	animal manure
	POC
	humus
	DOC for each of #1-5
	adsorbed C for each of #1-5
	microbial biomass for each of #1-5
	microbial residues for each of #1-5
Leaf Information	
Calc Method:	**Prognostic Canopy**
Function(s) Used:	**Vapor Pressure Deficit**
	Soil Carbon (TotSoilCarb or some component)
	Vegetation Carbon (TotLivCarb or some component)
	Soil Nitrogen (TotSoilNit)
Soil Layer Information	
Soil Layers:	**15**
	all layer depths and properties are user-selected up to 20
	all layer depths and properties are user-selected up to 20
	all layer depths and properties are user-selected up to 20
	all layer depths and properties are user-selected up to 20
	Surface Incident Shortwave Radiation (SWDown)
	Surface Incident Longwave Radiation (LWDown)
	Vapor Pressure Deficit
	CO_2 (CO2air)
	Vegetation Carbon (TotLivCarb or some component)
	Leaf Nitrogen (TotLeafNit)
	LAI
Heterotrophic Respiration (HeteroResp)	
Calc Method:	**Explicitly Calculated**
Function(s) Used:	**Anaerobic Decay (Methane Production)**
	CO2 Diffusion
	Dissolved Inorganic/Organic Carbon Loss
	Soil Temperature (SoilTmp)
	Soil Moisture (SoilMoist)
	Surface Incident Shortwave Radiation (SWDown)
	Surface Incident Longwave Radiation (LWDown)
	Soil Carbon (TotSoilCarb or some component)
	Vegetation Carbon (TotLivCarb or some component)
	Soil Nitrogen (TotSoilNit)
	Leaf Nitrogen (TotLeafNit)
Autotrophic Respiration (AutoResp)	
Calc Method:	**Explicitly Calculated (e.g. SiBCASA)**
Function(s) Used:	**Air Temperature (Tair - Near surface temperature)**
	Soil Temperature (SoilTmp)
	Vegetation Carbon (TotLivCarb or some component)
	Leaf Nitrogen (TotLeafNit)
	maintenance and growth respiration explicitly calculated
Ecosystem Respiration (EcoResp=AutoResp+HeteroResp)	
Calc Method:	**Autotropic Respiration+Heterotrophic Respiration (EcoResp)**
Net Primary Production (NPP)	
Calc Method:	**GPP - Autotrophic Respiration**
Net Ecosystem Exchange (NEE)	
Calc Method:	**GPP - Ecosystem Respiration**
Total Evapotranspiration (Evap)	
Function(s) Used:	**Air Temperature (Tair - Near surface temperature)**
	Soil Moisture (SoilMoist)
	Surface Incident Shortwave Radiation (SWDown)
	Surface Incident Longwave Radiation (LWDown)
	Vapor Pressure Deficit
	from first order closure of canopy and soil surface energy balances
Soil Moisture (SoilMoist)	
Function(s) Used:	**Surface Runoff**
	Subsurface Drainage
	Irrigation
	Water Vapor Diffusion through Soil
	Hydraulic Redistribution
	Water Table
	Soil Texture (sand, silt, clay)
	Air Temperature (Tair - Near surface temperature)
	Soil Temperature (SoilTmp)
	Precipitation (Rain+Snow)
	Surface Incident Shortwave Radiation (SWDown)
	Surface Incident Longwave Radiation (LWDown)
	Vapor Pressure Deficit

	all layer depths and properties are user-selected up to 20		
	all layer depths and properties are user-selected up to 20		
	all layer depths and properties are user-selected up to 20		
	all layer depths and properties are user-selected up to 20		
	all layer depths and properties are user-selected up to 20		
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	all layer depths and properties are user-selected up to 20		
	all layer depths and properties are user-selected up to 20		
	all layer depths and properties are user-selected up to 20		
Soil Texture(s):	Variable Texture		Richard's, Green-Ampt
	Carbon Dependent		
	BD, FC, WP, Ksat, macroporosity, coarse fragments, CEC, AEC, pH, SOC, SON, SOP,		

General Information

Model ID/Extent:	10/Both Site and Region
Model Acronym:	SiB3
Model Name:	Simple Biosphere Model (Version 3)
Institution Name:	Colorado State University
Institution URL:	http://biocycle.atmos.colostate.edu
Contact Name:	Ian Baker
Contact E-mail:	baker@atmos.colostate.edu
Cite as:	Baker, I.T., L. Prihodko, A.S. Denning, M. Goulden, S. Miller and H.R. da Rocha, (2008), Seasonal drought stress in the Amazon: Reconciling models and observations. Journal of Geophysical Research, 113,G00B01, doi: 10.1029/2007JG00644.

Spatial Information

Spatial Projection:	Lat Lon
Spatial Resolution:	10
Grid:	150000
Upper Left Lat:	60.2
Upper Left Lon:	-142.8
Lower Right Lat:	23.5
Lower Right Lon:	-52.6

Temporal Information

Temporal Resolution:	Hourly
Model Begin Date:	2000-01-01
Model End Date:	2006-12-31

Leaf Information

Calc Method:	LAI Specified with Remotely Sensed Product
Function(s) Used:	fPAR

Soil Layer Information

Soil Layers:	10
	0.0175
	0.045
	0.091
	0.165
	0.289
	0.493
	0.829
	1.383
	2.296
	3.433
Soil Texture(s):	Variable Texture
	Texture Classes

Disturbance Information

Precipitation:
Source: NARR
Temporal:

Temperature:
Source: NARR
Temporal:

Humidity: (Relative, Specific, or Vapor Pressure Deficit)
Source: NARR
Temporal:

Wind Speed:
Source: NARR
Temporal:

Solar Radiation:
Source: NARR
Temporal:

LAI:
Source: MODIS
Temporal:

fPAR:
Source: MODIS
Temporal:

Vegetation Distribution/Properties:
Type: Fixed Actual
Source: IGBP (MOD12.Q1)

Soil Distribution/Properties:
Source: IGBP-DIS

Gross Primary Productivity (GPP)
Calc Method: Enzyme Kinetic Model
Function(s) Used: Air Temperature (Tair - Near surface temperature)
Soil Moisture (SoilMoist)
Surface Incident Shortwave Radiation (SWDown)
Surface Incident Longwave Radiation (LWDown)
Vapor Pressure Deficit
CO_2 (CO2air)
Leaf Nitrogen (TotLeafNit)
fPAR

Heterotrophic Respiration (HeteroResp)
Calc Method: Zero-order Model

Autotrophic Respiration (AutoResp)
Calc Method: Assumed Fraction of Instanteous GPP

Ecosystem Respiration (EcoResp=AutoResp+HeteroResp)
Calc Method: Forced Annual Balance (e.g. SiB)

Net Primary Production (NPP)
Calc Method: GPP - Autotrophic Respiration

Net Ecosystem Exchange (NEE)
Calc Method: GPP - Ecosystem Respiration

Total Evapotranspiration (Evap)
Function(s) Used: Air Temperature (Tair - Near surface temperature)
Soil Temperature (SoilTmp)
Precipitation (Rain+Snow)
Soil Moisture (SoilMoist)
Surface Incident Shortwave Radiation (SWDown)
Specific Humidity (Qair)
Soil Texture

Soil Moisture (SoilMoist)
Function(s) Used: Surface Runoff
Subsurface Drainage
Water Vapor Diffusion through Soil
Soil Texture (sand, silt, clay)
Air Temperature (Tair - Near surface temperature)
Soil Temperature (SoilTmp)
Precipitation (Rain+Snow)
Surface Incident Shortwave Radiation (SWDown)
Surface Incident Longwave Radiation (LWDown)

Disturbances by Crops **From Observations**
Disturbances by Harvests **From Simulations**

General Information
Model ID/Extent: **11/Region**
Model Acronym: **TEM**
Model Name: **The Terrestrial Ecosystem Model**
Institution Name: **University of Alaska Fairbanks**
Institution URL: **http://picea.sel.uaf.edu/**
Contact Name: **A. David McGuire**
Contact E-mail: **ffadm@uaf.edu**
Cite as: **McGuire, A.D., S. Sitch, J.S. Clein, R. Dargaville, G. Esser, J. Foley, M. Heimann, F. Joos, J. Kaplan, D.W. Kicklighter, R.A. Meier, J.M. Melillo, B. Moore III, I.C. Prentice, N. Ramankutty, T. Reichenau, A. Schloss, H. Tian, L.J. Williams, and U. Wittenberg. 2001. Carbon balance of the terrestrial biosphere in the twentieth century: Analyses of CO2, climate and land-use effects with four process-based ecosystem models. Global Biogeochemical Cycles 15:183-206. Felzer, B., D. Kicklighter, J. Melillo, C. Wang, Q. Zhuang and R. Prinn (2004) Effects of ozone on net primary production and carbon sequestration in the conterminous United States using a biogeochemistry model. Tellus 56B, 230-248. Euskirchen, E. S., A. D. McGuire, D. W. Kicklighter, Q. Zhuang, J. S. Clein, R. J. Dargaville, D. G. Dye, J. S. Kimball, K. C. McDonald, J. M. Melillo, V. E. Romanovsky and N. V. Smith (2006) Importance of recent shifts in soil thermal dynamics on growing season length, productivity and carbon sequestration in terrestrial high-latitude ecosystems. Global Change Biology 12(4), 731-750, doi: 10.1111/j.1365-2486.2006.01113.x. Balshi, M. S., A. D. McGuire, Q. Zhuang, J. Melillo, D. W. Kicklighter, E. Kasischke, C. Wirth, M. Flannigan, J. Harden, J. S. Clein, T. J. Burnside, J. McAllister, W. A. Kurz, M. Apps and A. Shvidenko (2007) The role of historical fire disturbance in the carbon dynamics of the pan-boreal region: a process-based analysis. Journal of Geophysical Research 112, G02029, doi: 10.1029/2006JG000380.**

Spatial Information
Spatial Projection: **Lat Lon**
Spatial Resolution: **0.5**
Grid: **9843**
Upper Left Lat: **83**
Upper Left Lon: **-178**
Lower Right Lat: **45**
Lower Right Lon: **179.5**

Temporal Information
Model Begin Date: **2000-01-01**
Model End Date: **2006-12-31**

Carbon Information
Dynamic Veg Pools: **1**
VEGC
Dynamic Soil Pools: **2**
SOILORGC
DOC
Static Soil Pools: **1**
NONSOILC
Steady State Span: **-50000101**
Steady State Initial: **1000-12-31**

Leaf Information
Calc Method: **Prognostic Canopy**
Function(s) Used: **Potential Evaporation (PotEvap)**

Precipitation:
Source: **CRU / NCEP**
Temporal: **Monthly**

Temperature:
Source: **CRU / NCEP**
Temporal: **Monthly**

Solar Radiation:
Source: **CRU / NCEP**
Temporal:

Vegetation Distribution/Properties:
Type: **Dynamic**
Source: **Loveland et al., 2000; Hurtt et al., 2006**

Soil Distribution/Properties:
Source: **IGBP-DIS**

Specific Humidity (Qair)
Actual Evaporation (Evap)

Gross Primary Productivity (GPP)
Calc Method: **Enzyme Kinetic Model**
Function(s) Used: **Air Temperature (Tair - Near surface temperature)**
Soil Temperature (SoilTmp)
Surface Incident Shortwave Radiation (SWDown)
Potential Evaporation (PotEvap)
CO_2 (CO2air)
Vegetation Carbon (TotLivCarb or some component)
Soil Nitrogen (TotSoilNit)
AET, Ozone (AOT40)

Heterotrophic Respiration (HeteroResp)
Calc Method: **Explicitly Calculated**
Function(s) Used: **Soil Temperature (SoilTmp)**
Soil Moisture (SoilMoist)
Soil Carbon (TotSoilCarb or some component)
Soil Nitrogen (TotSoilNit)

Autotrophic Respiration (AutoResp)
Calc Method: **Explicitly Calculated (e.g. SiBCASA)**
Function(s) Used: **Air Temperature (Tair - Near surface temperature)**
Vegetation Carbon (TotLivCarb or some component)

Ecosystem Respiration (EcoResp=AutoResp+HeteroResp)
Calc Method: **Autotropic Respiration+Heterotrophic Respiration (EcoResp)**

Net Primary Production (NPP)
Calc Method: **GPP - Autotrophic Respiration**

Net Ecosystem Exchange (NEE)
Calc Method: **NPP - Heterotropic Respiration**

Total Evapotranspiration (Evap)
Function(s) Used: **Air Temperature (Tair - Near surface temperature)**
Soil Moisture (SoilMoist)
Potential Evaporation (PotEvap)
AET

Soil Moisture (SoilMoist)
Function(s) Used: **Subsurface Drainage**
Soil Texture (sand, silt, clay)
Precipitation (Rain+Snow)
AET

	Vegetation Carbon (TotLivCarb or some component)
	Other(s) (please specify):
Soil Layer Information	
Soil Layers:	**2**
	SOILH2O
	SNOWPACK
Soil Texture(s):	**Variable Texture**
Disturbance Information	
Disturbances by Fires	**From Observations**
Disturbances by Uses	**From Observations**
Disturbances by Harvests	**From Observations**

General Information	
Model ID/Extent:	**12/Both Site and Region**
Model Acronym:	**DLEM**
Model Name:	**Dynamic Land Ecosystem Model**
Institution Name:	**Auburn University**
Institution URL:	**http://www.sfws.auburn.edu/esra/**
Contact Name:	**Hanqin Tian**
Contact E-mail:	**tianhan@auburn.edu**
Cite as:	**Tian, HQ. X. Xu, C. Zhang, W. Ren, G. Chen, M. Liu, D. Lu and S. Pan. (2008) Forecasting and Assessing the Large-scale and Long-term Impacts of Global Environmental Change on Terrestrial Ecosystems in the United States and China. In: S. Miao, S. Carstenn, and M. Nungesser (Eds), Real World Ecology: large-scale and long-term case studies and methods. Springer-Verlag, New York. Ren, W., H. Tian, M. Liu, C. Zhang, G. Chen, S. Pan, B. Felzer, and X. Xu (2007), Effects of tropospheric ozone pollution on net primary productivity and carbon storage in terrestrial ecosystems of China, Journal of Geophysical Research, 112, D22S09, doi:10.1029/2007JD008521. Liu, M., H. Tian, G. Chen, W. Ren, C. Zhang, and J. Liu (2008) Effects of land use and land cover change on evapotranspiration and water yield in China during the 20th century, Journal of the American Water Resources Association, Vol. 44 (5).**
Spatial Information	
Spatial Projection:	**Other**
Other:	**ALBERS**
Spatial Resolution:	**32**
Grid:	**21580**
Upper Left Lat:	**83.5**
Upper Left Lon:	**-171.5**
Lower Right Lat:	**14.5**
Lower Right Lon:	**-52.5**
Temporal Information	
Temporal Resolution:	**Daily**
Model Begin Date:	**2000-01-01**
Model End Date:	**2005-12-31**
Carbon Information	
Dynamic Veg Pools:	**6**
	Leave
	sapwood
	heartwood
	coarse root
	fine root
	labile
Dynamic Soil Pools:	**3**
	Litter (very labile, Labile, resistance, coarse woody debris)
	Microbe
	Soil organic matter (labile, slow, humus)
Steady State Span:	**19790101-19991231**
Steady State Initial:	**2000-01-01**
Leaf Information	

Precipitation:	
Source:	**NARR**
Temporal:	
Temperature:	
Source:	**NARR**
Temporal:	
Humidity: (Relative, Specific, or Vapor Pressure Deficit)	
Source:	**NARR**
Temporal:	
Solar Radiation:	
Source:	**NARR**
Temporal:	
LAI:	
Source:	**MODIS**
Temporal:	
Vegetation Distribution/Properties:	
Type:	**Fixed Actual**
Source:	**IGBP (MOD12.Q1)**
Soil Distribution/Properties:	

Gross Primary Productivity (GPP)	
Calc Method:	**Stomatal Conductance Model**
Function(s) Used:	**Air Temperature (Tair - Near surface temperature)**
	Soil Moisture (SoilMoist)
	Surface Incident Shortwave Radiation (SWDown)
	Relative Humidity
	CO_2 (CO2air)
	Soil Nitrogen (TotSoilNit)
	Leaf Nitrogen (TotLeafNit)
	LAI
Heterotrophic Respiration (HeteroResp)	
Calc Method:	**First or Greater Order Model**
Autotrophic Respiration (AutoResp)	
Calc Method:	**Explicitly Calculated (e.g. SiBCASA)**
Function(s) Used:	**Air Temperature (Tair - Near surface temperature)**
	Soil Temperature (SoilTmp)
	Soil Carbon (TotSoilCarb or some component)
	Vegetation Carbon (TotLivCarb or some component)
	Soil Nitrogen (TotSoilNit)
	Leaf Nitrogen (TotLeafNit)
Ecosystem Respiration (EcoResp=AutoResp+HeteroResp)	
Calc Method:	**Autotropic Respiration+Heterotrophic Respiration (EcoResp)**
Net Primary Production (NPP)	
Calc Method:	**GPP - Autotrophic Respiration**
Net Ecosystem Exchange (NEE)	
Calc Method:	**NPP - Heterotropic Respiration**
Total Evapotranspiration (Evap)	
Function(s) Used:	**Air Temperature (Tair - Near surface temperature)**
	Soil Temperature (SoilTmp)
	Soil Moisture (SoilMoist)
	Surface Incident Shortwave Radiation (SWDown)
	Relative Humidity
Soil Moisture (SoilMoist)	
Function(s) Used:	**Surface Runoff**
	Subsurface Drainage
	Irrigation
	Hydraulic Redistribution
	Soil Texture (sand, silt, clay)
	Air Temperature (Tair - Near surface temperature)
	Precipitation (Rain+Snow)
	Surface Incident Shortwave Radiation (SWDown)
	Relative Humidity
	Actual Evaporation (Evap)
	Potential Evaporation (PotEvap)
Other:	
Fluxes of CH4 and N2O	

Calc Method:	**Prognostic Canopy**
Function(s) Used:	**Air Temperature (Tair - Near surface temperature)**
	Precipitation (Rain+Snow)
	Surface Incident Shortwave Radiation (SWDown)
	Relative Humidity
	CO_2 (CO2air)
	LAI
Soil Layer Information	
Soil Layers:	**2**
	0-50
	50-150
Soil Texture(s):	**Variable Texture**
Disturbance Information	
Disturbances by Fires	**From Observations**
Disturbances by Uses	**From Observations**
Disturbances by Crops	**From Observations**
Disturbances by Disasters	**From Observations**
Disturbances by Harvests	**From Observations**

General Information	
Model ID/Extent:	**13/Region**
Model Acronym:	**EPIC**
Model Name:	**Environmental Policy Integrated Climate**
Institution Name:	**Pacific Northwest National Laboratory at Joint Global Change Research Institute**
Institution URL:	**www.globalchange.umd.edu**
Contact Name:	**R. César Izaurralde**
Contact E-mail:	**cesar.izaurralde@pnl.gov**
Cite as:	**Williams, J.R. 1995. The EPIC model. In: V.P. Singh, (Ed.), Computer Models of Watershed Hydrology. Water Resources Publications, Highlands Ranch, CO, pp. 909–1000. Izaurralde, R.C., J.R. Williams, W.B. McGill, N.J. Rosenberg, and M.C. Quiroga Jakas. 2006. Simulating soil C dynamics with EPIC: Model description and testing against long-term data. Ecol. Modelling 192:362-384.**
Spatial Information	
Spatial Projection:	**Other**
Other:	**Point model that can be run at site and small watershed scale**
Spatial Resolution:	**1**
Upper Left Lat:	**0**
Upper Left Lon:	**0**
Lower Right Lat:	**0**
Lower Right Lon:	**0**
Temporal Information	
Temporal Resolution:	**Daily**
Model Begin Date:	**1941-01-01**
Model End Date:	**2006-12-31**
Carbon Information	
Dynamic Veg Pools:	**3**
	Crop yield
	Aboveground biomass
	Root biomass
Soil Layer Information	
Soil Layers:	**15**
	Variable depth
	Variable depth
	Variable depth
	Variable depth
	Variable depth
	Variable depth
	Variable depth
	Variable depth
	Variable depth
	Variable depth
	Variable depth
	Variable depth
	Variable depth

Precipitation:	
Source:	**Weather generator, station data, NCDC, NCEP Reanalysis**
Temporal:	
Temperature:	
Source:	**Weather generator, station data, NCDC, NCEP Reanalysis**
Temporal:	
Humidity: (Relative, Specific, or Vapor Pressure Deficit)	
Source:	**Weather generator, station data, NCDC, NCEP Reanalysis**
Temporal:	
Wind Speed:	
Source:	**Weather generator, station data, NCDC, NCEP Reanalysis**
Temporal:	
Solar Radiation:	
Source:	**Weather generator, station data, NCDC, NCEP Reanalysis**
Temporal:	
LAI:	
Source:	**Calculated**
Temporal:	
fPAR:	
Source:	**Calculated**
Temporal:	
Vegetation Distribution/Properties:	
Type:	**Dynamic**
Source:	**EPIC simulates up to 100 crops and plant species including native species**
Soil Distribution/Properties:	
Source:	**STATSGO, SSURGO, Harmonized World Soil Database**

Heterotrophic Respiration (HeteroResp)	
Calc Method:	**First or Greater Order Model**
Function(s) Used:	**CO2 Diffusion**
	Dissolved Inorganic/Organic Carbon Loss
	Air Temperature (Tair - Near surface temperature)
	Soil Temperature (SoilTmp)
	Precipitation (Rain+Snow)
	Soil Moisture (SoilMoist)
Ecosystem Respiration (EcoResp=AutoResp+HeteroResp)	
Calc Method:	**Autotropic Respiration+Heterotrophic Respiration (EcoResp)**
Net Primary Production (NPP)	
Calc Method:	**Light Use Efficiency Model**
Net Ecosystem Exchange (NEE)	
Calc Method:	**NPP - Heterotropic Respiration**
Total Evapotranspiration (Evap)	
Function(s) Used:	**Surface Incident Shortwave Radiation (SWDown)**
	Relative Humidity
Soil Moisture (SoilMoist)	
Function(s) Used:	**Relative Humidity**
	Actual Evaporation (Evap)
Other:	
Crop yields, water and wind erosion, complete carbon balance including soil carbon erosion, changes in soil properties, denitrification, fate of pesticides, impacts of climate change on crop yields and other environmental variables, and many other outputs.	

	Variable depth **Variable depth** Soil Texture(s): **Variable Texture** **Carbon Dependent**		
General Information Model ID/Extent: **16/Both Site and Region** Model Acronym: **ISOLSM** Model Name: **ISOLSM** Institution Name: **LBNL** Institution URL: **www.lbl.gov** Contact Name: **William J. Riley** Contact E-mail: **wjriley@lbl.gov** Cite as: **Cooley, H. S., W. J. Riley, M. S. Torn, and Y. He (2005), Impact of agricultural practice on regional climate in a coupled land surface mesoscale model, Journal of Geophysical Research-Atmospheres, 110. Riley, W. J., C. J. Still, M. S. Torn, and J. A. Berry (2002), A mechanistic model of H218O and C18OO fluxes between ecosystems and the atmosphere: Model description and sensitivity analyses, Global Biogeochemical Cycles, 16, 1095-1109. Riley, W. J., S. C. Biraud, M. S. Torn, M. L. Fischer, J. A. Berry, and D. Billesbach (2008), Inter-Annual Regional CO2 and Latent Heat Surface Fluxes in the Southern Great Plains: Measurements, Modeling, and Scaling, submitted to JGR-Biogeosciences.** **Spatial Information** Spatial Projection: **Lat Lon** Spatial Resolution: **250** Other: **predictions at 250 m are aggregated to 10 km resolution** Upper Left Lat: **38.4** Upper Left Lon: **-99.5** Lower Right Lat: **34.9** Lower Right Lon: **-95.5** **Temporal Information** Temporal Resolution: **Other** Other: **Output at 2-hourly** Model Begin Date: **2003-01-01** Model End Date: **2006-01-01** **Carbon Information** Static Soil Pools: **1** **soc** **Soil Layer Information** Soil Texture(s): **Variable Texture**	**Precipitation:** Source: **NEXRAD** Temporal: **Hourly** **Temperature:** Source: **Mesonet** Temporal: **Hourly** **Humidity: (Relative, Specific, or Vapor Pressure Deficit)** Source: **Mesonet** Temporal: **Hourly** **Wind Speed:** Source: **Mesonet** Temporal: **Hourly** **Solar Radiation:** Source: **Mesonet** Temporal: **Hourly** **NDVI:** Source: **MODIS** Temporal: **16-day** **LAI:** Source: **derived from NDVI** Temporal: **16-day** **Vegetation Distribution/Properties:** Type: **Fixed Actual** Source: **Generated from archetypal LAI profiles** **Soil Distribution/Properties:** Source: **STATSGO**	**Gross Primary Productivity (GPP)** Calc Method: **Stomatal Conductance Model** Function(s) Used: **Air Temperature (Tair - Near surface temperature)** **Soil Moisture (SoilMoist)** **Surface Incident Shortwave Radiation (SWDown)** **Surface Incident Longwave Radiation (LWDown)** **Specific Humidity (Qair)** **CO_2 (CO2air)** **LAI** **Heterotrophic Respiration (HeteroResp)** Calc Method: **First or Greater Order Model** **Autotrophic Respiration (AutoResp)** Calc Method: **Assumed Fraction of Instanteous GPP** **Ecosystem Respiration (EcoResp=AutoResp+HeteroResp)** Calc Method: **Autotropic Respiration+Heterotrophic Respiration (EcoResp)** **Net Ecosystem Exchange (NEE)** Calc Method: **GPP - Ecosystem Respiration** Function(s) Used: **Using a modified version of LSM1 (see details in Bonan 1996)** **Total Evapotranspiration (Evap)** Function(s) Used: **Air Temperature (Tair - Near surface temperature)** **Soil Temperature (SoilTmp)** **Precipitation (Rain+Snow)** **Soil Moisture (SoilMoist)** **Surface Incident Shortwave Radiation (SWDown)** **Surface Incident Longwave Radiation (LWDown)** **Specific Humidity (Qair)** **Soil Texture** **Soil Moisture (SoilMoist)** Function(s) Used: **Surface Runoff** **Subsurface Drainage** **Irrigation** **Hydraulic Redistribution** **Water Table** **Soil Texture (sand, silt, clay)** **Air Temperature (Tair - Near surface temperature)** **Soil Temperature (SoilTmp)** **Precipitation (Rain+Snow)** **Surface Incident Shortwave Radiation (SWDown)** **Surface Incident Longwave Radiation (LWDown)** **Specific Humidity (Qair)** **Other:** The model simulates the entire energy and C balance, as well as vegetation and soil temperature, soil moisture
General Information Model ID/Extent: **17/Region** Model Acronym: **VEGAS** Model Name: **VEgetation-Global-Atmosphere-Soil** Institution Name: **University of Maryland, College Park** Institution URL: **http://www.atmos.umd.edu/~cabo** Contact Name: **Dr. Ning Zeng** Contact E-mail: **zeng@atmos.umd.edu** Cite as: **Zeng, N., A. Mariotti, and P. Wetzel, 2005: Terrestrial mechanisms of interannual CO2 variability, Global Biogeochemical Cycles, 19, GB1016, doi:10.1029/2004GB002273. Zeng, N., H. Qian, C. Roedenbeck, and M.**	**Precipitation:** Source: **CRU and PRECL from CPC, NOAA** Temporal: **Monthly** **Temperature:** Source: **GISS** Temporal: **Monthly** **Humidity: (Relative, Specific, or Vapor Pressure Deficit)** Source: **CRU Climatology** Temporal: **Monthly** **Wind Speed:** Source: **CRU Climatology** Temporal: **Monthly** **Solar Radiation:**	**Gross Primary Productivity (GPP)** Calc Method: **Light Use Efficiency Model** Function(s) Used: **Air Temperature (Tair - Near surface temperature)** **Precipitation (Rain+Snow)** **Soil Moisture (SoilMoist)** **Surface Incident Shortwave Radiation (SWDown)** **CO_2 (CO2air)** **Vegetation Carbon (TotLivCarb or some component)** **Heterotrophic Respiration (HeteroResp)** Calc Method: **Explicitly Calculated**

	Heimann, 2005: Impact of 1998-2002 midlatitude drought and warming on terrestrial ecosystem and the global carbon cycle. Geophys. Res. Lett., 32, L22709, doi:10.1029/2005GL024607
Spatial Information	
Spatial Projection:	**Lat Lon**
Spatial Resolution:	**1**
Grid:	**360x180**
Upper Left Lat:	**90**
Upper Left Lon:	**0**
Lower Right Lat:	**-90**
Lower Right Lon:	**-0**
Temporal Information	
Model Begin Date:	**1901-01-01**
Model End Date:	**2008-06-30**
Carbon Information	
Dynamic Veg Pools:	**3**
	Leaf
	Wood
	Root
Dynamic Soil Pools:	**3**
	Fast
	Med
	Slow
Leaf Information	
Calc Method:	**Annual Fraction of GPP/NPP**
Function(s) Used:	**Air Temperature (Tair - Near surface temperature)**
	Precipitation (Rain+Snow)
	Soil Moisture (SoilMoist)
	Surface Incident Shortwave Radiation (SWDown)
	CO_2 (CO2air)
Soil Layer Information	
Soil Layers:	**1**
	Simple Land model
Soil Texture(s):	**a bucket model with 500mm maximum capacity**
Disturbance Information	
Disturbances by Fires	**From Simulations**

Source:	**ECMWF**
Temporal:	**Monthly**
Vegetation Distribution/Properties:	
Type:	**Dynamic**
Source:	**Not Applicable (Dynamic)**
Soil Distribution/Properties:	

Function(s) Used:	**Dissolved Inorganic/Organic Carbon Loss**
	Air Temperature (Tair - Near surface temperature)
	Vegetation Carbon (TotLivCarb or some component)
Autotrophic Respiration (AutoResp)	
Calc Method:	**Explicitly Calculated (e.g. SiBCASA)**
Function(s) Used:	**Air Temperature (Tair - Near surface temperature)**
	Vegetation Carbon (TotLivCarb or some component)
Ecosystem Respiration (EcoResp=AutoResp+HeteroResp)	
Calc Method:	**Autotropic Respiration+Heterotrophic Respiration (EcoResp)**
Net Primary Production (NPP)	
Calc Method:	**GPP - Autotrophic Respiration**
Net Ecosystem Exchange (NEE)	
Calc Method:	**NPP - Heterotropic Respiration**
Total Evapotranspiration (Evap)	
Function(s) Used:	**Air Temperature (Tair - Near surface temperature)**
	Precipitation (Rain+Snow)
	Soil Moisture (SoilMoist)
	Surface Incident Shortwave Radiation (SWDown)
	Surface Incident Longwave Radiation (LWDown)
	Specific Humidity (Qair)
Soil Moisture (SoilMoist)	
Function(s) Used:	**Surface Runoff**
	Subsurface Drainage
	Air Temperature (Tair - Near surface temperature)
	Soil Temperature (SoilTmp)
	Precipitation (Rain+Snow)

General Information	
Model ID/Extent:	**19/Region**
Model Acronym:	**Biome-BGC**
Model Name:	**Biome-BGC**
Institution Name:	**Oregon State University**
Institution URL:	
Contact Name:	**David Turner**
Contact E-mail:	**david.turner@oregonstate.edu**
Cite as:	**1. Thornton, P. E., Law, B. E., Gholz, H. L., Clark, K. L., Falge, E., Ellsworth, D. S., Goldstein, A. H., Monson, R. K., Hollinger, D., Falk, M., Chen, J., and Sparks, J. P.: Modeling and measuring the effects of disturbance history and climate on carbon and water budgets in evergreen needleleaf forests, Agricultural and Forest Meteorology, 113, 185-222, 2002. 2. Turner, D.P., Ritts, W.D., Law, B.E., Cohen, W.B., Yang, Z., Hudiburg, T., Campbell, J.L., Duane, M. 2007. Scaling net ecosystem production and net biome production over a heterogeneous region in the western United States. Biogeosciences 4:597-612.**
Spatial Information	
Spatial Projection:	**Lat Lon**
Spatial Resolution:	**1**
Upper Left Lat:	**46.35**
Upper Left Lon:	**-124.83**
Lower Right Lat:	**41.77**
Lower Right Lon:	**-116.79**
Temporal Information	

Precipitation:	
Source:	**DAYMET**
Temporal:	
Temperature:	
Source:	**DAYMET**
Temporal:	
Humidity: (Relative, Specific, or Vapor Pressure Deficit)	
Source:	**DAYMET**
Temporal:	
Solar Radiation:	
Source:	**DAYMET**
Temporal:	
Vegetation Distribution/Properties:	
Type:	**Fixed Actual**
Source:	**NLCD**
Soil Distribution/Properties:	
Source:	**CONUS**

Gross Primary Productivity (GPP)	
Calc Method:	**Stomatal Conductance Model**
Function(s) Used:	**Air Temperature (Tair - Near surface temperature)**
	Soil Moisture (SoilMoist)
	Surface Incident Shortwave Radiation (SWDown)
	Vapor Pressure Deficit
	CO_2 (CO2air)
	Leaf Nitrogen (TotLeafNit)
	LAI
Heterotrophic Respiration (HeteroResp)	
Calc Method:	**Explicitly Calculated**
Function(s) Used:	**Soil Temperature (SoilTmp)**
	Soil Moisture (SoilMoist)
	Soil Carbon (TotSoilCarb or some component)
Autotrophic Respiration (AutoResp)	
Calc Method:	**Explicitly Calculated (e.g. SiBCASA)**
Function(s) Used:	**Air Temperature (Tair - Near surface temperature)**
	Vegetation Carbon (TotLivCarb or some component)
	Leaf Nitrogen (TotLeafNit)
Ecosystem Respiration (EcoResp=AutoResp+HeteroResp)	
Calc Method:	**Explicitly Calculated**
Function(s) Used:	**Air Temperature (Tair - Near surface temperature)**
	Soil Temperature (SoilTmp)
	Soil Moisture (SoilMoist)

Temporal Resolution:	**Yearly**		**Soil Carbon (TotSoilCarb or some component)**
Model Begin Date:	**2000-01-01**		**Vegetation Carbon (TotLivCarb or some component)**
Model End Date:	**2002-01-01**		**LAI**
Carbon Information			**Net Primary Production (NPP)**
Dynamic Veg Pools:	**4**		Calc Method: **Explicitly Calculated**
	leaves		Function(s) Used: **Surface Incident Shortwave Radiation (SWDown)**
	stems		**Vapor Pressure Deficit**
	coarse roots		**CO_2 (CO2air)**
	fine roots		**Vegetation Carbon (TotLivCarb or some component)**
Leaf Information			**Leaf Nitrogen (TotLeafNit)**
Calc Method:	**Prognostic Canopy**		**LAI**
Function(s) Used:	**Air Temperature (Tair - Near surface temperature)**		**Net Ecosystem Exchange (NEE)**
	Vapor Pressure Deficit		Calc Method: **Explicitly Calculated**
	CO_2 (CO2air)		Function(s) Used: **Soil Temperature (SoilTmp)**
	Vegetation Carbon (TotLivCarb or some component)		**Soil Moisture (SoilMoist)**
	Soil Nitrogen (TotSoilNit)		**Surface Incident Shortwave Radiation (SWDown)**
	Leaf Nitrogen (TotLeafNit)		**Vapor Pressure Deficit**
	LAI		**Total Evapotranspiration (Evap)**
Disturbance Information			Function(s) Used: **Surface Incident Shortwave Radiation (SWDown)**
Disturbances by Fires	**From Observations**		**Surface Incident Longwave Radiation (LWDown)**
Disturbances by Crops	**From Simulations**		**Vapor Pressure Deficit**
Disturbances by Harvests	**From Observations**		**Soil Moisture (SoilMoist)**
			Function(s) Used: **Precipitation (Rain+Snow)**
			Vapor Pressure Deficit
			Actual Evaporation (Evap)
General Information		**(Regional Inputs NA)**	**Gross Primary Productivity (GPP)**
Model ID/Extent:	**21/Site**		Calc Method: **Statistical**
Model Acronym:	**EDCM**		**Heterotrophic Respiration (HeteroResp)**
Model Name:	**Erosion Deposition Carbon Model**		Calc Method: **Explicitly Calculated**
Institution Name:	**USGS Earth Resources Observation and Science**		Function(s) Used: **Dissolved Inorganic/Organic Carbon Loss**
Institution URL:	**http://eros.usgs.gov/**		**Soil Temperature (SoilTmp)**
Contact Name:	**Dr. Shuguang Liu**		**Soil Moisture (SoilMoist)**
Contact E-mail:	**sliu@usgs.gov**		**Soil Carbon (TotSoilCarb or some component)**
Cite as:	**Liu, S., N. Bliss, E. Sundquist and T. Huntington. 2003. Modelling carbon dynamics in vegetation and soil under the impact of soil erosion and deposition. Global Biogeochemical Cycles 17:1074, doi:10.1029/2002GB002010.**		**Vegetation Carbon (TotLivCarb or some component)**
Temporal Information			**Soil Nitrogen (TotSoilNit)**
Model Begin Date:	**1000-01-01**		**Autotrophic Respiration (AutoResp)**
Model End Date:	**2100-12-31**		Calc Method: **Proportional to Growth**
Carbon Information			**Ecosystem Respiration (EcoResp=AutoResp+HeteroResp)**
Dynamic Veg Pools:	**9**		Calc Method: **Autotropic Respiration+Heterotrophic Respiration (EcoResp)**
	leaf		**Net Primary Production (NPP)**
	branch		Calc Method: **Explicitly Calculated**
	stem		Function(s) Used: **Air Temperature (Tair - Near surface temperature)**
	coarse roots		**Precipitation (Rain+Snow)**
	fine roots		**Soil Moisture (SoilMoist)**
	litter		**Soil Carbon (TotSoilCarb or some component)**
	dead branch		**Vegetation Carbon (TotLivCarb or some component)**
	dead stem		**Soil Nitrogen (TotSoilNit)**
	dead coarse root		**Leaf Nitrogen (TotLeafNit)**
Dynamic Soil Pools:	**5**		**LAI**
	metabolic		**Net Ecosystem Exchange (NEE)**
	structural		Calc Method: **NPP - Heterotropic Respiration**
	active		**Total Evapotranspiration (Evap)**
	slow		Function(s) Used: **Air Temperature (Tair - Near surface temperature)**
	passive		**Soil Temperature (SoilTmp)**
Leaf Information			**Soil Moisture (SoilMoist)**
Calc Method:	**Annual Fraction of GPP/NPP**		**Potential Evaporation (PotEvap)**
Function(s) Used:	**Air Temperature (Tair - Near surface temperature)**		**Soil Texture**

	Soil Temperature (SoilTmp) **Precipitation (Rain+Snow)** **Soil Moisture (SoilMoist)** **Actual Evaporation (Evap)** **CO_2 (CO2air)** **Soil Carbon (TotSoilCarb or some component)** **Vegetation Carbon (TotLivCarb or some component)** **Soil Nitrogen (TotSoilNit)** **Leaf Nitrogen (TotLeafNit)** **LAI**		**Soil Moisture (SoilMoist)** Function(s) Used: **Surface Runoff** **Subsurface Drainage** **Irrigation** **Organic Matter Content** **Soil Texture (sand, silt, clay)** **Soil Temperature (SoilTmp)** **Precipitation (Rain+Snow)** **Potential Evaporation (PotEvap)**
Soil Layer Information			
Soil Layers:	**10** **flexible** **flexible** **flexible** **flexible** **flexible** **flexible** **flexible** **flexible** **flexible** **flexible**		
Soil Texture(s):	**Variable Texture** **Texture Classes** **Carbon Dependent** **variable soil layer thickness**		
Disturbance Information			
Disturbances by Fires	**From Observations**		
Disturbances by Uses	**From Observations**		
Disturbances by Crops	**From Observations**		
Disturbances by Disasters	**From Observations**		
Disturbances by Harvests	**From Observations**		
Disturbances by Pests	**From Observations**		
General Information		**(Regional Inputs NA)**	**Gross Primary Productivity (GPP)**
Model ID/Extent:	**22/Site**		Calc Method: **Light Use Efficiency Model**
Model Acronym:	**DNDC**		Function(s) Used: **Air Temperature (Tair - Near surface temperature)** **Precipitation (Rain+Snow)** **Soil Moisture (SoilMoist)** **Potential Evaporation (PotEvap)** **CO_2 (CO2air)** **Vegetation Carbon (TotLivCarb or some component)** **Soil Nitrogen (TotSoilNit)** **Leaf Nitrogen (TotLeafNit)** **fPAR**
Model Name:	**DeNitrification-DeComposition model**		
Institution Name:	**Complex Systems Research Center, University of New Hampshire**		
Institution URL:	**http://www.dndc.sr.unh.edu/**		
Contact Name:	**Christina Tonitto**		
Contact E-mail:	**ct244@cornell.edu**		
Cite as:	**Li C., Frolking S., Frolking T.A. 1992. A model of nitrous oxide evolution from soil driven by rainfall events: 1. Model structure and sensitivity. Journal of Geophysical Research 97:9759-9776.**		**Heterotrophic Respiration (HeteroResp)** Calc Method: **Explicitly Calculated** Function(s) Used: **Anaerobic Decay (Methane Production)** **Soil Temperature (SoilTmp)** **Precipitation (Rain+Snow)** **Soil Moisture (SoilMoist)** **Soil Carbon (TotSoilCarb or some component)** **Vegetation Carbon (TotLivCarb or some component)** **Soil Nitrogen (TotSoilNit)**
Temporal Information			**Autotrophic Respiration (AutoResp)** Calc Method: **Explicitly Calculated (e.g. SiBCASA)** Function(s) Used: **Soil Temperature (SoilTmp)** **root age**
Temporal Resolution:	**Daily**		**Ecosystem Respiration (EcoResp=AutoResp+HeteroResp)** Calc Method: **Autotropic Respiration+Heterotrophic Respiration (EcoResp)** Function(s) Used: **Soil Temperature (SoilTmp)** **Soil Moisture (SoilMoist)** **Soil Carbon (TotSoilCarb or some component)**
Model Begin Date:	**1992-01-01**		
Model End Date:	**2006-12-31**		
Carbon Information			
Dynamic Veg Pools:	**3** **grain** **shoot** **root**		
Dynamic Soil Pools:	**9** **very labile litter** **labile litter** **resistant litter** **humads** **humus** **microbes** **urea** **NH4** **NO3**		
Soil Layer Information			
Soil Layers:	**10**		

	0-10 cm **10-20 cm** **20-30 cm** **30-40 cm** **40-50 cm** **50-60 cm** **60-70 cm** **70-80 cm** **80-90 cm** **90-100 cm**		**Vegetation Carbon (TotLivCarb or some component)** **Soil Nitrogen (TotSoilNit)** **Leaf Nitrogen (TotLeafNit)**
Soil Texture(s):	**Variable Texture** **Texture Classes**		**Net Primary Production (NPP)**
Disturbance Information			Calc Method: **Explicitly Calculated**
Disturbances by Crops	**From Observations**		Function(s) Used: **Air Temperature (Tair - Near surface temperature)** **Precipitation (Rain+Snow)** **Soil Moisture (SoilMoist)** **Potential Evaporation (PotEvap)** **Vegetation Carbon (TotLivCarb or some component)** **Soil Nitrogen (TotSoilNit)** **Leaf Nitrogen (TotLeafNit)** **fPAR**
Disturbances by Disasters	**From Observations**		**Net Ecosystem Exchange (NEE)**
Disturbances by Harvests	**From Observations**		Calc Method: **NPP - Heterotropic Respiration**
Disturbances by Pests	**From Observations**		**Total Evapotranspiration (Evap)**
			Function(s) Used: **Air Temperature (Tair - Near surface temperature)** **Precipitation (Rain+Snow)** **Soil Moisture (SoilMoist)**
			Soil Moisture (SoilMoist)
			Function(s) Used: **Subsurface Drainage** **Hydraulic Redistribution** **Soil Texture (sand, silt, clay)** **Precipitation (Rain+Snow)** **Potential Evaporation (PotEvap)**
			Other: N gas flux (N2, N2O, NO), NO3 leaching
General Information		**(Regional Inputs NA)**	**Gross Primary Productivity (GPP)**
Model ID/Extent:	**23/Site**		Calc Method: **Enzyme Kinetic Model**
Model Acronym:	**ED**		Function(s) Used: **Air Temperature (Tair - Near surface temperature)** **Soil Moisture (SoilMoist)** **Surface Incident Shortwave Radiation (SWDown)** **Surface Incident Longwave Radiation (LWDown)** **Specific Humidity (Qair)** **CO_2 (CO2air)** **Vegetation Carbon (TotLivCarb or some component)** **Leaf Nitrogen (TotLeafNit)** **LAI**
Model Name:	**Ecosystem Demography Model (v2.1)**		**Heterotrophic Respiration (HeteroResp)**
Institution Name:	**Harvard University**		Calc Method: **Explicitly Calculated**
Institution URL:	**www.esm.harvard.edu**		Function(s) Used: **Soil Temperature (SoilTmp)** **Soil Moisture (SoilMoist)** **Soil Carbon (TotSoilCarb or some component)** **Soil Nitrogen (TotSoilNit)**
Contact Name:	**Paul Moorcroft (PI) and Mike Dietze (contact for intercomparison)**		**Autotrophic Respiration (AutoResp)**
Contact E-mail:	**mdietze@illinois.edu**		Calc Method: **Explicitly Calculated (e.g. SiBCASA)**
Cite as:	**Moorcroft, PR, Hurtt, GC, and Pacala, SW (2001). A method for scaling vegetation dynamics: the ecosystem demography model (ED) Ecological Monographs 74:557-586.**		Function(s) Used: **Air Temperature (Tair - Near surface temperature)** **Soil Temperature (SoilTmp)** **Vegetation Carbon (TotLivCarb or some component)** **Leaf Nitrogen (TotLeafNit)** **GPP**
Temporal Information			**Ecosystem Respiration (EcoResp=AutoResp+HeteroResp)**
Temporal Resolution:	**Other**		Calc Method: **Autotropic Respiration+Heterotrophic Respiration (EcoResp)**
Other:	**essentially instantanous (adaptive runga-kutta integration, always <4min)**		**Net Primary Production (NPP)**
Model Begin Date:	**1991-06-01**		Calc Method: **GPP - Autotrophic Respiration**
Model End Date:	**2007-12-31**		**Net Ecosystem Exchange (NEE)**
Carbon Information			Calc Method: **NPP - Heterotropic Respiration**
Dynamic Veg Pools:	**9** **Early Successional Hardwood** **Northern Mid-successional Hardwood** **Southern Mid-successional Hardwood** **Late Successional Hardwood** **Southern Pine** **Northern Pine** **Mid-successional Conifer** **Late Successional Conifer** **Hydric and Evergreen**		**Total Evapotranspiration (Evap)**
Dynamic Soil Pools:	**3** **Litter/fast-soil carbon** **structural soil carbon** **slow soil carbon**		
Static Soil Pools:	**1** **passive soil carbon**		
Leaf Information			
Calc Method:	**Prognostic Canopy**		

Function(s) Used:	**Air Temperature (Tair - Near surface temperature)**
	Vegetation Carbon (TotLivCarb or some component)
Soil Layer Information	
Soil Layers:	**9**
	0-5cm
	5-10cm
	10-20cm
	20-40cm
	40-60cm
	60-80cm
	80-100cm
	100-150cm
	150-200cm
Soil Texture(s):	**Texture Classes**
Disturbance Information	
Disturbances by Fires	**From Simulations**
Disturbances by Uses	**From Observations**
Disturbances by Disasters	**From Simulations**
Disturbances by Harvests	**From Observations**

Function(s) Used:	**Air Temperature (Tair - Near surface temperature)**
	Soil Temperature (SoilTmp)
	Precipitation (Rain+Snow)
	Soil Moisture (SoilMoist)
	Surface Incident Shortwave Radiation (SWDown)
	Surface Incident Longwave Radiation (LWDown)
	Specific Humidity (Qair)
	Soil Texture
Soil Moisture (SoilMoist)	
Function(s) Used:	**Surface Runoff**
	Subsurface Drainage
	Water Table
	Soil Texture (sand, silt, clay)
	Soil Temperature (SoilTmp)
	Precipitation (Rain+Snow)
	Actual Evaporation (Evap)
	lateral subsurface flow
Other:	
Stand/Patch level (fast time step): canopy leaf temperature, surface roughness, sensible heat, albedo, soil nitrogen, instantaneous canopy carbon and water fluxes, soil temperature profile, snow mass and density (3 layers), surface runoff, subsurface lateral flow, subsurface drainage, root, leaf, stem, growth, and maintainence respiration Tree level (slow time step): continuous distribution of tree sizes (DBH, biomass, height) and foliage (mass, LAI) within a stand/patch by functional type Landscape level: continuous distribution of stand ages and compositions across the landscape as a function of subgrid variation in elevation, slope, aspect, soil texture, and topographic moisture.	

General Information	
Model ID/Extent:	**26/Both Site and Region**
Model Acronym:	**Can-IBIS**
Model Name:	**Canadian Integrated BIosphere Simulator**
Institution Name:	**Natural Resources Canada, Northern Forestry Centre.**
Institution URL:	**http://nofc.cfs.nrcan.gc.ca/climate/en/index_e.html**
Contact Name:	**David Price**
Contact E-mail:	**dprice@nrcan.gc.ca**
Cite as:	**Still working on this. See: El Maayar, M., Price, D.T., Black, T.A., Humphreys, E.R., Jork, E-M., 2002. Sensitivity tests of the Integrated BIosphere Simulator (IBIS) to soil and vegetation characteristics in a Pacific Coastal coniferous forest. Atmosphere–Ocean 40(3), 313-332. Foley, J.A., Prentice, I.C., Ramankutty, N., Levis, S., Pollard, D., Sitch, S., Haxeltine, A., 1996. An integrated biosphere model of land surface processes, terrestrial carbon balance, and vegetation dynamics, Glob. Biogeochem. Cycles, 10 (4), 603-623. Kucharik, C., Barford, C., El Maayar, M., Wofsy, S.C., Monson, R.K., Baldocchi, D.D., 2006. Evaluation of a Dynamic Global Vegetation Model (DGVM) at the forest stand-level: vegetation structure, phenology, and seasonal and inter-annual CO2 and H2O vapor exchange at three AmeriFlux Ameriflux study sites. Ecol. Modelling 196, 1-31.**
Spatial Information	
Spatial Projection:	**Other**
Other:	**Can use Lat/Lon or Lambert Conformal Conic or others**
Spatial Resolution:	**100**
Other:	**100 m (site level); 10 km LCC, or 0.08333 degree Lat/Lon**
Grid:	**100000+**
Upper Left Lat:	**85**
Upper Left Lon:	**-170**
Lower Right Lat:	**25**

Precipitation:	
Source:	**Canadian Forest Service spatial data; Fluxnet EC tower data for point-based sims**
Temporal:	
Temperature:	
Source:	**Canadian Forest Service spatial data; Fluxnet EC tower data for point-based sims**
Temporal:	
Humidity: (Relative, Specific, or Vapor Pressure Deficit)	
Source:	**Canadian Forest Service spatial data; Fluxnet EC tower data for point-based sims**
Temporal:	
Wind Speed:	
Source:	**Canadian Forest Service spatial data; Fluxnet EC tower data for point-based sims**
Temporal:	
Solar Radiation:	
Source:	**Canadian Forest Service spatial data; Fluxnet EC tower data for point-based sims**
Temporal:	
Vegetation Distribution/Properties:	
Type:	**Dynamic**
Source:	**Not Applicable (Dynamic)**
Soil Distribution/Properties:	
Source:	**Canadian Soil Landscapes of Canada, STATSGO (Alaska) VEMAP2 (continental USA)**

Gross Primary Productivity (GPP)	
Calc Method:	**Enzyme Kinetic Model**
Function(s) Used:	**Air Temperature (Tair - Near surface temperature)**
	Precipitation (Rain+Snow)
	Soil Moisture (SoilMoist)
	Surface Incident Shortwave Radiation (SWDown)
	Surface Incident Longwave Radiation (LWDown)
	Vapor Pressure Deficit
	Actual Evaporation (Evap)
	CO_2 (CO2air)
	Soil Nitrogen (TotSoilNit)
	Leaf Nitrogen (TotLeafNit)
Heterotrophic Respiration (HeteroResp)	
Calc Method:	**First or Greater Order Model**
Autotrophic Respiration (AutoResp)	
Calc Method:	**Explicitly Calculated (e.g. SiBCASA)**
Function(s) Used:	**Air Temperature (Tair - Near surface temperature)**
	Soil Temperature (SoilTmp)
	Precipitation (Rain+Snow)
	Soil Moisture (SoilMoist)
	Surface Incident Shortwave Radiation (SWDown)
	Surface Incident Longwave Radiation (LWDown)
	Vegetation Carbon (TotLivCarb or some component)
Ecosystem Respiration (EcoResp=AutoResp+HeteroResp)	
Calc Method:	**Autotropic Respiration+Heterotrophic Respiration (EcoResp)**
Net Primary Production (NPP)	
Calc Method:	**GPP - Autotrophic Respiration**
Net Ecosystem Exchange (NEE)	
Calc Method:	**NPP - Heterotropic Respiration**
Total Evapotranspiration (Evap)	
Function(s) Used:	**Air Temperature (Tair - Near surface temperature)**

Lower Right Lon: **-52**

Temporal Information

Temporal Resolution: **Other**

Other: **Can be half-hourly**

Model Begin Date: **1901-01-01**

Model End Date: **2100-12-31**

Carbon Information

Dynamic Veg Pools: **3**

Wood (including coarse roots)
Foliage
Fine roots

Dynamic Soil Pools: **7**

Leaf litter
Wood litter
Leaf litter
Fineroot litter
Fine root litter
Woody litter
Microbial biomass

Steady State Span: **16010101 - 19001231**

Steady State Initial: **1901-01-01**

Leaf Information

Calc Method: **Prognostic Canopy**

Function(s) Used: **Air Temperature (Tair - Near surface temperature)**
Soil Temperature (SoilTmp)
Precipitation (Rain+Snow)
Soil Moisture (SoilMoist)
Surface Incident Shortwave Radiation (SWDown)
Surface Incident Longwave Radiation (LWDown)
Vapor Pressure Deficit
Actual Evaporation (Evap)
CO_2 (CO2air)
Soil Carbon (TotSoilCarb or some component)
Vegetation Carbon (TotLivCarb or some component)
Soil Nitrogen (TotSoilNit)
Leaf Nitrogen (TotLeafNit)

Soil Layer Information

Soil Layers: **7**

0 to 0.1 m
0.1 to 0.25 m
0.25 to 0.5 m
0.5 to 1.0 m
1.0 to 2.0 m
2.0 to 4.0 m
4.0 to 8.0 m

Soil Texture(s): **Variable Texture**

Texture Classes

Disturbance Information

Disturbances by Fires **From Observations**

Other Disturbances: **Model can also simulate fire from climate and veg conditions but not very well!**

Soil Temperature (SoilTmp)
Precipitation (Rain+Snow)
Soil Moisture (SoilMoist)
Surface Incident Shortwave Radiation (SWDown)
Surface Incident Longwave Radiation (LWDown)
Specific Humidity (Qair)
Soil Texture

Soil Moisture (SoilMoist)

Function(s) Used: **Surface Runoff**
Subsurface Drainage
Organic Matter Content
Hydraulic Redistribution
Soil Texture (sand, silt, clay)
Air Temperature (Tair - Near surface temperature)
Soil Temperature (SoilTmp)
Precipitation (Rain+Snow)
Surface Incident Shortwave Radiation (SWDown)
Specific Humidity (Qair)

Other:

Depth of soil-freezing; Vegetation composition (combination of Plant Functional Types, weighted by LAI); Stemwood biomass for each of broadleaved and needleleafed PFTs

General Information

Model ID/Extent: **27/Both Site and Region**

Model Acronym: **SiBcrop**

Model Name: **Simple Biosphere Model with crop phenology**

Institution Name: **Colorado State University**

Institution URL:

Contact Name: **Erandi Lokupitiya, Scott Denning, and Keith Paustian**

Contact E-mail: **erandi@atmos.colostate.edu**

Cite as: **Lokupitiya, E., Denning, S., Paustian, K., Baker, I., Schaefer, K., Verma, S., Meyers, T., Bernacchi, C., Suyker, A., and M. Fischer. 2009. Incorporation of crop phenology in Simple Biosphere Model**

Precipitation:

Source:

Temporal:

Temperature:

Source:

Temporal:

Wind Speed:

Source:

Temporal:

Solar Radiation:

Source:

Temporal:

LAI:

Source: **simulated**

Gross Primary Productivity (GPP)

Calc Method: **Enzyme Kinetic Model**

Function(s) Used: **Air Temperature (Tair - Near surface temperature)**
Surface Incident Shortwave Radiation (SWDown)
Surface Incident Longwave Radiation (LWDown)
Vapor Pressure Deficit
Vegetation Carbon (TotLivCarb or some component)
LAI
fPAR

Heterotrophic Respiration (HeteroResp)

Calc Method: **Explicitly Calculated**

	(SiBcrop) to improve land-atmosphere carbon exchanges from croplands. Biogeosciences, 6, 969-986.	Temporal:	Function(s) Used: **Soil Temperature (SoilTmp)**
Spatial Information		**fPAR:**	**Soil Carbon (TotSoilCarb or some component)**
Spatial Projection:	**Lat Lon**	Source: **simulated**	**Autotrophic Respiration (AutoResp)**
Spatial Resolution:	**0**	Temporal:	Calc Method: **Explicitly Calculated (e.g. SiBCASA)**
Upper Left Lat:	**0**	**Vegetation Distribution/Properties:**	Function(s) Used: **Air Temperature (Tair - Near surface temperature)**
Upper Left Lon:	**0**	Type: **Dynamic**	**Vegetation Carbon (TotLivCarb or some component)**
Lower Right Lat:	**0**		**GPP**
Lower Right Lon:	**0**		**carbon allocation to different pools, fraction of total non structural carbohydr**
Temporal Information			**Ecosystem Respiration (EcoResp=AutoResp+HeteroResp)**
Temporal Resolution:	**Half-hourly**		Calc Method: **Forced Annual Balance (e.g. SiB)**
Model Begin Date:	**2000-01-01**		**Net Primary Production (NPP)**
Model End Date:	**2006-12-31**		Calc Method: **GPP - Autotrophic Respiration**
Carbon Information			**Net Ecosystem Exchange (NEE)**
Dynamic Veg Pools:	**4**		Calc Method: **GPP - Ecosystem Respiration**
	Roots		**Total Evapotranspiration (Evap)**
	leaves		Function(s) Used: **Air Temperature (Tair - Near surface temperature)**
	stems		**Soil Temperature (SoilTmp)**
	products (flowers, seeds,pods, etc.)		**Precipitation (Rain+Snow)**
Dynamic Soil Pools:	**1**		**Soil Moisture (SoilMoist)**
	soil		**Surface Incident Shortwave Radiation (SWDown)**
Leaf Information			**Surface Incident Longwave Radiation (LWDown)**
Calc Method:	**Annual Fraction of GPP/NPP**		**Soil Texture**
Function(s) Used:	**Air Temperature (Tair - Near surface temperature)**		**Soil Moisture (SoilMoist)**
	Soil Temperature (SoilTmp)		Function(s) Used: **Surface Runoff**
	Precipitation (Rain+Snow)		**Subsurface Drainage**
	Soil Moisture (SoilMoist)		**Soil Texture (sand, silt, clay)**
	Surface Incident Shortwave Radiation (SWDown)		**Precipitation (Rain+Snow)**
	Surface Incident Longwave Radiation (LWDown)		**Actual Evaporation (Evap)**
	Specific Humidity (Qair)		**density of water**
	Vegetation Carbon (TotLivCarb or some component)		**Other:**
Soil Layer Information			Leaf area index, biomass carbon in different plant pools (including harvest) and total biomass, daily growth and maintenance respiration (calculated within the phenology scheme)
Soil Layers:	**10**		
	top layer		
	top layer		
	rooting		
	rooting		
	rooting		
	rooting		
	rooting		
	rooting		
	rooting		
	rooting		
Soil Texture(s):	**Texture Classes**		
	Texture classification based on STATSGO		
Disturbance Information			
Disturbances by Crops	**From Observations**		
Disturbances by Harvests	**From Simulations**		
General Information		**(Regional Inputs NA)**	**Gross Primary Productivity (GPP)**
Model ID/Extent:	**29/Site**		Calc Method: **Enzyme Kinetic Model**
Model Acronym:	**BEPS**		Function(s) Used: **Relative Humidity**
Model Name:	**Boreal Ecosystem Productivity Simulator**		**LAI**
Institution Name:	**University of Toronto**		**Heterotrophic Respiration (HeteroResp)**
Institution URL:	**http://faculty.geog.utoronto.ca /Chen/Chen's%20homepage/res_beps.htm**		Calc Method: **Explicitly Calculated**
Contact Name:	**Jing Chen**		Function(s) Used: **Air Temperature (Tair - Near surface temperature)**
Contact E-mail:	**chenj@geog.utoronto.ca**		**Soil Temperature (SoilTmp)**
Cite as:	**Chen, J. M., J. Liu, J. Cihlar and M. L. Guolden, 1999. Daily canopy photosynthesis model through temporal and spatial scaling for remote sensing applications. Ecological Modelling, 124:99-119. Liu, J., J. M. Chen, J. Cihlar, and W. Chen. 1999. Net primary productivity distribution in the BOREAS study region from a process model driven by satellite and surface data. Journal of**		**Precipitation (Rain+Snow)**
			Soil Moisture (SoilMoist)
			Actual Evaporation (Evap)
			Soil Carbon (TotSoilCarb or some component)
			Soil Nitrogen (TotSoilNit)
			Autotrophic Respiration (AutoResp)
			Calc Method: **Explicitly Calculated (e.g. SiBCASA)**

	Geophysical Research, vol. 104, No. D22, pages 27,735-27,754. Ju, W., J. M. Chen, T. A. Black, A. Barr, J. Liu, and B. Chen, 2006. Modeling coupled water and carbon fluxes in a boreal aspen forest. Agricultural and Forest Meteorology, 140: 136-151.		
Temporal Information			
Temporal Resolution:	**Hourly**		
Model Begin Date:	**2000-01-01**		
Model End Date:	**2007-12-31**		
Carbon Information			
Dynamic Veg Pools:	**2**		
	foliage		
	finroot		
Static Veg Pools:	**2**		
	coarse root		
	stem		
Dynamic Soil Pools:	**8**		
	coarse and dead wood detritus		
	surface structural		
	surface metobolic		
	fine root structural litter		
	fine root metabolic		
	surface microbial		
	soil microbial		
	slow		
Static Soil Pools:	**1**		
	passive		
Steady State Span:	**18000001-19000101**		
Steady State Initial:	**1900-01-01**		
Leaf Information			
Calc Method:	**LAI Specified with Remotely Sensed Product**		
Function(s) Used:	**CO_2 (CO2air)**		
	Soil Carbon (TotSoilCarb or some component)		
	Vegetation Carbon (TotLivCarb or some component)		
	Soil Nitrogen (TotSoilNit)		
	Leaf Nitrogen (TotLeafNit)		
	LAI		
Soil Layer Information			
Soil Layers:	**3**		
	upper root zone		
	lower root zone		
	below root zone		
Soil Texture(s):	**Texture Classes**		
General Information		**(Regional Inputs NA)**	**Heterotrophic Respiration (HeteroResp)**
Model ID/Extent:	**30/Site**		Calc Method: **Explicitly Calculated**
Model Acronym:	**daycent**		Function(s) Used: **Soil Temperature (SoilTmp)**
Model Name:	**daycent**		**Precipitation (Rain+Snow)**
Institution Name:	**USDA ARS SPNR**		**Soil Moisture (SoilMoist)**
Institution URL:	**http://www.nrel.colostate.edu/projects/century/**		**Soil Carbon (TotSoilCarb or some component)**
Contact Name:	**William Parton**		**Autotrophic Respiration (AutoResp)**
Contact E-mail:	**billp@nrel.colostate.edu**		Calc Method: **Proportional to Growth**
Cite as:	**Del Grosso, S.J., Parton, W.J., Mosier, A.R., Hartman, M.D., Brenner, J., Ojima, D.S., Schimel, D.S. 2001. Simulated interaction of carbon dynamics and nitrogen trace gas fluxes using the DAYCENT model. In: Schaffer, M., et al. (Eds.), Modeling Carbon and Nitrogen Dynamics for Soil Management, p. 303-332, CRC Press, Boca Raton, Florida, USA. Del Grosso, S.J., W.J. Parton, A.R. Mosier, M.K. Walsh, D.S. Ojima, P.E. Thornton. 2006. DAYCENT national scale simulations of N2O emissions from cropped soils in the USA. Journal of Environmental Quality, 35:1451-1460 DOI: 10.2134/jeq2005.0160.**		**Ecosystem Respiration (EcoResp=AutoResp+HeteroResp)**
			Calc Method: **Autotropic Respiration+Heterotrophic Respiration (EcoResp)**
			Net Primary Production (NPP)
			Calc Method: **Explicitly Calculated**
			Function(s) Used: **Air Temperature (Tair - Near surface temperature)**
			Soil Temperature (SoilTmp)
			Precipitation (Rain+Snow)
			Soil Moisture (SoilMoist)
			Actual Evaporation (Evap)
			Potential Evaporation (PotEvap)
			Vegetation Carbon (TotLivCarb or some component)
			Soil Nitrogen (TotSoilNit)
			LAI
Temporal Information			
Temporal Resolution:	**Daily**		

Model Begin Date: **1900-01-01** Model End Date: **2008-12-31** **Carbon Information** Dynamic Veg Pools: **5** **fine roots** **coarse roots** **branches** **large wood** **leaves** Dynamic Soil Pools: **3** **active** **slow** **passive** Steady State Span: **10000101** Steady State Initial: **1899-12-31** **Soil Layer Information** Soil Layers: **10** **0-2** **2-5** **5-10** **10-30** **30-45** **45-60** **60-75** **75-90** **90-105** **105-120** Soil Texture(s): **Texture Classes** **Disturbance Information** Disturbances by Fires **From Simulations** Disturbances by Uses **From Simulations** Disturbances by Crops **From Simulations** Disturbances by Disasters **From Simulations** Disturbances by Harvests **From Simulations** Disturbances by Pests **From Simulations**		**Net Ecosystem Exchange (NEE)** Calc Method: **NPP - Heterotropic Respiration** **Total Evapotranspiration (Evap)** Function(s) Used: **Air Temperature (Tair - Near surface temperature)** **Precipitation (Rain+Snow)** **Soil Moisture (SoilMoist)** **Potential Evaporation (PotEvap)** **Soil Moisture (SoilMoist)** Function(s) Used: **Surface Runoff** **Subsurface Drainage** **Irrigation** **Water Table** **Soil Texture (sand, silt, clay)** **Precipitation (Rain+Snow)** **Potential Evaporation (PotEvap)**
General Information Model ID/Extent: **31/Site** Model Acronym: **EDCM** Model Name: **Erosion- Deposition- Carbon-Model** Institution Name: **USGS EROS** Institution URL: **http://edcintl.cr.usgs.gov/carbon_cycle/BiogeochemicalModelingResearch.php** Contact Name: **Shuguang Liu** Contact E-mail: **shuguangliusliu@usgs.gov** Cite as: **Liu, S., N. Bliss, et al. (2003). "Modeling carbon dynamics in vegetation and soil under the impact of soil erosion and deposition." Global Biogeochemical Cycles 17(2): 1074, doi:1010.1029/2002GB002010.** **Temporal Information** Model Begin Date: **1970-01-01** Model End Date: **2008-12-31** **Carbon Information** Dynamic Veg Pools: **8** **grain (for crop and grass)** **shoot carbon(for crop and grass)** **root carbon(for crop and grass)** **leaf carbon(for forest and shrub)** **fine roots carbon(for forest and shrub)** **fine branches carbon (for forest and shrub)** **large wood carbon (for forest and shrub)** **coarse roots carbon (for forest and shrub)** Dynamic Soil Pools: **5** **metabolic** **structural** **active** **slow**	**(Regional Inputs NA)**	**Net Primary Production (NPP)** Calc Method: **Explicitly Calculated** Function(s) Used: **Air Temperature (Tair - Near surface temperature)** **Precipitation (Rain+Snow)** **Soil Carbon (TotSoilCarb or some component)** **Soil Nitrogen (TotSoilNit)** **Net Ecosystem Exchange (NEE)** Calc Method: **Explicitly Calculated** Function(s) Used: **NEP** **Soil Moisture (SoilMoist)** Function(s) Used: **Subsurface Drainage** **Irrigation** **Soil Texture (sand, silt, clay)** **Air Temperature (Tair - Near surface temperature)** **Soil Temperature (SoilTmp)** **Precipitation (Rain+Snow)** **Potential Evaporation (PotEvap)**

	passive		
Leaf Information			
Calc Method:	**Annual Fraction of GPP/NPP**		
Function(s) Used:	**Air Temperature (Tair - Near surface temperature)**		
	Precipitation (Rain+Snow)		
	Soil Carbon (TotSoilCarb or some component)		
	Soil Nitrogen (TotSoilNit)		
Soil Layer Information			
Soil Layers:	**10**		
	0-20		
	20-40		
	40-60		
	60-80		
	80-100		
	100-120		
	120-140		
	140-160		
	160-180		
	180-200		
Soil Texture(s):	**Texture Classes**		
Disturbance Information			
Disturbances by Fires	**From Observations**		
Disturbances by Uses	**From Observations**		
Disturbances by Crops	**From Observations**		
Disturbances by Disasters	**From Observations**		
Disturbances by Harvests	**From Simulations**		
Disturbances by Pests	**From Observations**		
General Information		**(Regional Inputs NA)**	**Gross Primary Productivity (GPP)**
Model ID/Extent:	**32/Site**		Calc Method: **Enzyme Kinetic Model**
Model Acronym:	**CN-CLASS**		Function(s) Used: **Air Temperature (Tair - Near surface temperature)**
Model Name:	**C &N Canadian Land Surface Scheme**		**Precipitation (Rain+Snow)**
Institution Name:	**McMaster University, Hamilton, Onatrio, Canada**		**Soil Moisture (SoilMoist)**
Institution URL:	**http://www.science.mcmaster.ca /geo/faculty/arain/**		**Surface Incident Shortwave Radiation (SWDown)**
Contact Name:	**M. Altaf Arain**		**Surface Incident Longwave Radiation (LWDown)**
Contact E-mail:	**arainm@mcmaster.ca**		**Specific Humidity (Qair)**
Cite as:	**Arain, M.A., Yaun F., Black T.A., 2006: Soil–plant nitrogen cycling modulated carbon exchanges in a western temperate conifer forest in Canada. Agricultural and Forest Meteorology 140:171-192. DOI: 10.1016/j.agrformet.2006.03.02. Arain, M.A., Black T.A., Barr A.G., Jarvis, P.G., Massheder J.M., Verseghy D.L. and Nesic Z., 2002: Effects of seasonal and interannual climate variability on net ecosystem productivity of boreal deciduous and conifer forests. Canadian Journal of Forest Research, 32: 878-891.**		**CO_2 (CO2air)**
			Soil Nitrogen (TotSoilNit)
			Leaf Nitrogen (TotLeafNit)
			LAI
Temporal Information			**Heterotrophic Respiration (HeteroResp)**
Temporal Resolution:	**Half-hourly**		Calc Method: **First or Greater Order Model**
Model Begin Date:	**1998-01-01**		**Autotrophic Respiration (AutoResp)**
Model End Date:	**2006-12-31**		Calc Method: **Assumed Fraction of Instanteous GPP**
Carbon Information			**Ecosystem Respiration (EcoResp=AutoResp+HeteroResp)**
Dynamic Veg Pools:	**4**		Calc Method: **Autotropic Respiration+Heterotrophic Respiration (EcoResp)**
	Leaf		**Net Primary Production (NPP)**
	Stem		Calc Method: **Assumed Fraction of Instanteous GPP**
	Root		**Net Ecosystem Exchange (NEE)**
	Non-structural reservoir		Calc Method: **GPP - Ecosystem Respiration**
Dynamic Soil Pools:	**3**		**Total Evapotranspiration (Evap)**
	Litter		Function(s) Used: **Ball–Woodrow–Berry formulation with sensitivity to soil water availability,**
	Short-lived SOM		**Soil Moisture (SoilMoist)**
	Stable SOM		Function(s) Used: **Surface Runoff**
Steady State Span:	**19900101**		**Subsurface Drainage**
Steady State Initial:	**1998-01-01**		**Organic Matter Content**
Leaf Information			**Soil Texture (sand, silt, clay)**
Calc Method:	**Prognostic Canopy**		**Air Temperature (Tair - Near surface temperature)**
Soil Layer Information			**Soil Temperature (SoilTmp)**
Soil Layers:	**3**		**Precipitation (Rain+Snow)**
			Surface Incident Shortwave Radiation (SWDown)
			Surface Incident Longwave Radiation (LWDown)

	0-10 cm **10-25 cm** **25-365 cm**		**Specific Humidity (Qair)**
Soil Texture(s):	**Variable Texture**		
General Information		**(Regional Inputs NA)**	**Gross Primary Productivity (GPP)**
Model ID/Extent:	**33/Site**		Calc Method: **Stomatal Conductance Model**
Model Acronym:	**TECO**		Function(s) Used: **Air Temperature (Tair - Near surface temperature)**
Model Name:	**Terrestrial ECOsystem model**		**Soil Moisture (SoilMoist)**
Institution Name:	**University of Oklahoma**		**Surface Incident Shortwave Radiation (SWDown)**
Institution URL:	**http://bomi.ou.edu/luo/**		**Vapor Pressure Deficit**
Contact Name:	**Yiqi Luo**		**CO_2 (CO2air)**
Contact E-mail:	**yluo@ou.edu**		**Heterotrophic Respiration (HeteroResp)**
Cite as:	**Weng, Ensheng, Luo, Yiqi, 2008. Soil hydrological properties regulate grassland ecosystem responses to multifactor global change: a modeling analysis. Journal of Geophysical Research – Biogeosciences. doi:10.1029/2007JG000539.**		Calc Method: **First or Greater Order Model**
Temporal Information			**Autotrophic Respiration (AutoResp)**
Temporal Resolution:	**Hourly**		Calc Method: **Explicitly Calculated (e.g. SiBCASA)**
Model Begin Date:	**2009-01-01**		Function(s) Used: **Air Temperature (Tair - Near surface temperature)**
Model End Date:	**2009-12-31**		**Vegetation Carbon (TotLivCarb or some component)**
Carbon Information			**Ecosystem Respiration (EcoResp=AutoResp+HeteroResp)**
Dynamic Veg Pools:	**3**		Calc Method: **Autotropic Respiration+Heterotrophic Respiration (EcoResp)**
	Leaves		**Net Primary Production (NPP)**
	Woody		Calc Method: **GPP - Autotrophic Respiration**
	Fine Roots		**Net Ecosystem Exchange (NEE)**
Dynamic Soil Pools:	**5**		Calc Method: **GPP - Ecosystem Respiration**
	Metabolic Litter		**Total Evapotranspiration (Evap)**
	Structural Litter		Function(s) Used: **Evaporation + Transpiration**
	Fast soil organic matter (SOM)		**Soil Moisture (SoilMoist)**
	Slow SOM		Function(s) Used: **Surface Runoff**
	Passive SOM		**Subsurface Drainage**
Leaf Information			**Soil Texture (sand, silt, clay)**
Calc Method:	**Prognostic Canopy**		**Soil Temperature (SoilTmp)**
Function(s) Used:	**Air Temperature (Tair - Near surface temperature)**		**Precipitation (Rain+Snow)**
	Precipitation (Rain+Snow)		**Actual Evaporation (Evap)**
	Soil Moisture (SoilMoist)		**Other:**
	Surface Incident Shortwave Radiation (SWDown)		The temporal coverage depends on input data
	Vapor Pressure Deficit		
Soil Layer Information			
Soil Layers:	**10**		
	10cm		
	10cm		
	10cm		
	10cm		
	10cm		
	20cm		
	20cm		
	20cm		
	20cm		
	20cm		
Soil Texture(s):	**Variable Texture**		
General Information		**EVI:**	**Gross Primary Productivity (GPP)**
Model ID/Extent:	**34/Region**	Source: **MODIS**	Calc Method: **Statistical**
Model Acronym:	**EC-MOD**	Temporal:	Function(s) Used: **LAI**
Model Name:	**Carbon Fluxes Derived from Eddy Covariance and MODIS Data**	**LAI:**	**EVI**
Institution Name:	**Penn State**	Source: **MODIS**	**LSWI**
Institution URL:	**http://www.personal.psu.edu/jux11**	Temporal:	**Land surface temperature (LST)**
Contact Name:	**Jingfeng Xiao**	**Vegetation Distribution/Properties:**	**Net Ecosystem Exchange (NEE)**
Contact E-mail:	**jing@psu.edu**	Type: **Fixed Actual**	Calc Method: **Explicitly Calculated**
Cite as:	**1. Xiao, J., Zhuang, Q., Law, B.E., Chen, J., Baldocchi, D.D., Cook, D.R., Oren, R., Richardson, A.D.,Wharton, S., Ma, S., Martin, T.A., Verma, S.B., Suyker, A.E., Scott, R.L., Monson, R.K.,Litvak, M., Hollinger, D.Y., Sun, G., Davis, K.J., Bolstad, P.V., Burns, S.P., Curtis, P.S.,**	Source: **IGBP (MOD12.Q1)**	Function(s) Used: **EVI** **LSWI** **Land surface temperature (LST), Surface Reflectance**

Drake, B.G., Falk, M., Fischer, M.L., Foster, D.R., Gu, L., 2008. A continuous measure of gross primary productivity for the conterminous U.S. derived from MODIS and AmeriFlux data.Global Change Biology, under review. 2. Xiao, J., Zhuang, Q., Baldocchi, D.D., Law, B.E., Richardson, A.D., Chen, J., Oren, R., Starr, G., Noormets, A., Ma, S., Verma, S.B., Wharton, S., Wofsy, S.C., Bolstad, P.V., Burns, S.P., Cook, D.R., Curtis, P.S., Drake, B.G., Falk,M., M.L. Fischer, D.R. Foster, L. Gu, J.L. Hadley, D.Y. Hollinger, G.G. Katul, M. Litvak, T.A. Martin, R. Matamala, McNulty, S., Meyers, T.P., Monson, R.K., Munger, J.W., Oechel, W.C., Paw U, K.T., Schmid, H.P., Scott, R.L., Sun,G., Suyker, A.E., Torn, M.S., 2008. Estimation of net ecosystem carbon exchange for the conterminous United States by combining MODIS and AmeriFlux data. Agricultural and Forest Meteorology, 148 (11), 1827-1847.		
Spatial Information		
Spatial Projection: **Lat Lon**		
Spatial Resolution: **1**		
Upper Left Lat: **60**		
Upper Left Lon: **-180**		
Lower Right Lat: **20**		
Lower Right Lon: **-42.6**		
Temporal Information		
Temporal Resolution: **Weekly**		
Model Begin Date: **2000-03-01**		
Model End Date: **2006-12-31**		
Disturbance Information		
Disturbances by Fires **From Observations**		
Disturbances by Crops **From Observations**		
Disturbances by Disasters **From Observations**		
Other Disturbances: **hurricanes**		
General Information	**Temperature:**	**Gross Primary Productivity (GPP)**
Model ID/Extent: **36/Region**	Source: **GMAO/DAO**	Calc Method: **Light Use Efficiency Model**
Model Acronym: **EC-LUE**	Temporal: **3-hourly**	Function(s) Used: **Surface Incident Shortwave Radiation (SWDown)**
Model Name: **Eddy Covariance-Light Use Efficiency**	**Humidity: (Relative, Specific, or Vapor Pressure Deficit)**	**Surface Incident Longwave Radiation (LWDown)**
Institution Name: **U.S. Geological Survey (USGS) Earth Resources Observation and Science (EROS) Cen**	Source: **GMAO/DAO**	**Relative Humidity**
Institution URL:	Temporal: **3-hourly**	**Actual Evaporation (Evap)**
Contact Name: **Shuguang Liu**	**Solar Radiation:**	**LAI**
Contact E-mail: **sliu@usgs.gov**	Source: **GMAO/DAO**	**NDVI**
Cite as: **Yuan W, Liu S, Zhou G, Zhou G, Tieszen LL, Baldocchi D, Bernhofer C, Gholz H, Goldstein AH, Goulden ML, Hollinger DY, Hu Y, Law BE, Stoy PC, Vesala T, Wofsy SC. 2007. Deriving a light use efficiency model from eddy covariance flux data for predicting daily gross primary production across biomes. Agricultural and Forest Meteorology, 143: 189-207.**	Temporal: **3-hourly**	
Spatial Information	**NDVI:**	
Spatial Projection: **UTM**	Source: **MODIS**	
Spatial Resolution: **1**	Temporal: **8-day**	
Grid: **8880**	**LAI:**	
Upper Left Lat: **84**	Source:	
Upper Left Lon: **-170**	Temporal: **8-day**	
Lower Right Lat: **10**	**Vegetation Distribution/Properties:**	
Lower Right Lon: **-50**	Type: **Fixed Actual**	
Temporal Information	Source: **Model parameters of EC-LUE are invariant across various vegetation types.**	
Model Begin Date: **2004-01-01**		
Model End Date: **2005-12-31**		
General Information	**Precipitation:**	**Heterotrophic Respiration (HeteroResp)**
Model ID/Extent: **37/Both Site and Region**	Source: **NARR**	Calc Method: **First or Greater Order Model**
Model Acronym: **ISAM**	Temporal:	**Total Evapotranspiration (Evap)**
Model Name: **Integrated Science Assessment Model**	**Temperature:**	Function(s) Used: **Air Temperature (Tair - Near surface temperature)**
Institution Name: **University of Illinois at Urbana-Champaign**	Source: **NARR**	

Institution URL:		Temporal:			Precipitation (Rain+Snow)
Contact Name:	**Atul Jain**	**Vegetation Distribution/Properties:**			Soil Moisture (SoilMoist)
Contact E-mail:	**jain@atmos.uiuc.edu**	Type:	**Fixed Actual**		Potential Evaporation (PotEvap)
	Jain, A.K. and X. Yang (2005): Modeling the Effects of Two Different Land Cover Change Data Sets on the Carbon Stocks of Plants and Soils in Concert With CO2 and Climate Change, Global Biogeochemical Cycles, 19, GB2015, doi:10.1029/2004GB002349 Yang, X.	Source:	**Loveland and Belward (1997) and Haxeltine and Prentice (1996)**		Soil Texture
Cite as:	**A.K. Jain, W.M. Post, 2008, Integration of nitrogen dynamics in a global ecosystem model, Global Biogeochemical Cycles (submitted). Paper can be downloaded from the following website http://climate.atmos.uiuc.edu /YangEtAl_GBC2009.pdf**	**Soil Distribution/Properties:**		**Soil Moisture (SoilMoist)**	
Spatial Information		Source:	**FAO (Zobler)**	Function(s) Used:	**Soil Texture (sand, silt, clay)**
Spatial Projection:	**Lat Lon**				**Air Temperature (Tair - Near surface temperature)**
Spatial Resolution:	**0.5**				
Grid:	**10536**				
Upper Left Lat:	**84**				
Upper Left Lon:	**-170**				
Lower Right Lat:	**10**				
Lower Right Lon:	**-50**				
Temporal Information					
Temporal Resolution:	**Weekly**				
Model Begin Date:	**2001-01-01**				
Model End Date:	**2007-12-31**				
Carbon Information					
Dynamic Veg Pools:	**5**				
	Non-Woody Tree Parts				
	Aboveground Woody Tree Parts				
	Tree Roots				
	Ground Vegetation Foliage				
	Ground Vegetation Roots				
Dynamic Soil Pools:	**8**				
	Above Ground Metabolic Litter				
	Above Ground Structural Litter				
	Above Ground Microbial Soil				
	Yound Humus Soil				
	Below Ground Decomposable Litter				
	Below Ground Resistent Litter				
	Below Ground Microbial soil				
	Stabilized Humus Soil				
Steady State Initial:	**1765-01-01**				
Soil Layer Information					
Soil Layers:	**1**				
	rooting depth				
Soil Texture(s):	**Variable Texture**				
Disturbance Information					
Disturbances by Uses	**From Observations**				

General Information		**Precipitation:**		**Gross Primary Productivity (GPP)**	
Model ID/Extent:	**38/Region**	Source:	**CRU 2006**	Calc Method:	**Stomatal Conductance Model**
Model Acronym:	**LPJmL**	Temporal:	**Monthly**	Function(s) Used:	**Air Temperature (Tair - Near surface temperature)**
Model Name:	**LPJ Managed Lands**	**Temperature:**			**Precipitation (Rain+Snow)**
Institution Name:	**Potsdam Institute for Climate Impact Research**	Source:	**CRU 2006**		**Soil Moisture (SoilMoist)**
Institution URL:	**www.pik-potsdam.de**	Temporal:	**Monthly**		**Surface Incident Longwave Radiation (LWDown)**
Contact Name:	**Ben Poulter**	**Solar Radiation:**			**Actual Evaporation (Evap)**
Contact E-mail:	**ben.poulter@pik-potsdam.de**	Source:	**CRU 2006 (clouds)**		**Potential Evaporation (PotEvap)**
	Gerten, D, S Schaphoff, U Haberlandt, W Lucht, and S Sitch. 2004. Terrestrial vegetation and water balance - hydrological evaluation of a dynamic global vegetation model. Journal of Hydrology 286:249-270.	Temporal:	**Monthly**		**CO_2 (CO2air)**
		Vegetation Distribution/Properties:			**fPAR**
Cite as:	**Sitch, S, B Smith, IC Prentice, A Arneth, A Bondeau, W Cramer, JO Kaplan, S Levis, W Lucht, MT Sykes, K Thonicke, and S Venevsky. 2003. Evaluation of ecosystem dynamics, plant geography and terrestrial carbon cycling in the LPJ dynamic global vegetation model. Global Change Biology 9:161-185.**	Type:	**Dynamic**	**Heterotrophic Respiration (HeteroResp)**	
		Soil Distribution/Properties:		Calc Method:	**Explicitly Calculated**
		Source:	**FAO (Zobler)**	Function(s) Used:	**Soil Temperature (SoilTmp)**
					Soil Moisture (SoilMoist)
					Soil Carbon (TotSoilCarb or some component)
				Autotrophic Respiration (AutoResp)	
				Calc Method:	**Explicitly Calculated (e.g. SiBCASA)**

Spatial Information
Spatial Projection: **Lat Lon**
Spatial Resolution: **0.5**
Upper Left Lat: **0**
Upper Left Lon: **0**
Lower Right Lat: **0**
Lower Right Lon: **0**
Temporal Information
Model Begin Date: **1901-01-01**
Model End Date: **2006-12-01**
Carbon Information
Dynamic Veg Pools: **3**
Sapwood
Heartwood
Foliage
Dynamic Soil Pools: **2**
Intermediate
Slow
Steady State Span: **19010101-19301201**
Leaf Information
Calc Method: **Prognostic Canopy**
Function(s) Used: **Soil Moisture (SoilMoist)**
Vegetation Carbon (TotLivCarb or some component)
Soil Layer Information
Soil Layers: **2**
Upper
Lower
Soil Texture(s): **Variable Texture**
Disturbance Information
Disturbances by Fires **From Simulations**

Function(s) Used: **Air Temperature (Tair - Near surface temperature)**
Soil Temperature (SoilTmp)
Soil Moisture (SoilMoist)
Soil Carbon (TotSoilCarb or some component)
Vegetation Carbon (TotLivCarb or some component)
Ecosystem Respiration (EcoResp=AutoResp+HeteroResp)
Calc Method: **Autotropic Respiration+Heterotrophic Respiration (EcoResp)**
Net Primary Production (NPP)
Calc Method: **GPP - Autotrophic Respiration**
Net Ecosystem Exchange (NEE)
Calc Method: **NPP - Heterotropic Respiration**
Total Evapotranspiration (Evap)
Function(s) Used: **Air Temperature (Tair - Near surface temperature)**
Precipitation (Rain+Snow)
Soil Moisture (SoilMoist)
Actual Evaporation (Evap)
Potential Evaporation (PotEvap)
Soil Texture
Soil Moisture (SoilMoist)
Function(s) Used: **Surface Runoff**
Subsurface Drainage
Soil Texture (sand, silt, clay)
Precipitation (Rain+Snow)
Actual Evaporation (Evap)
Potential Evaporation (PotEvap)
Other:
Fire carbon emissions

General Information
Model ID/Extent: **39/Both Site and Region**
Model Acronym: **ORCHIDEE**
Model Name: **ORganizing Carbon and Hydrology In Dynamic EcosystEms**
Institution Name: **IPSL**
Institution URL: **http://orchidee.ipsl.jussieu.fr/**
Contact Name: **Nicolas Viovy**
Contact E-mail: **viovy@lsce.ipsl.fr**
Cite as: **Krinner, G., Viovy, N., Noblet-Ducoudre, N. de, Ogee, J., Polcher, J., Friedlingstein, P., Ciais, P., Sitch, S., et Prentice, I. C (2005). A dynamic global vegetation model for studies of the coupled atmosphere-biosphere system. Global Biogeochemical Cycles, 19(1), GB1015.**
Spatial Information
Spatial Projection: **Lat Lon**
Spatial Resolution: **0.5**
Grid: **148x241**
Upper Left Lat: **83.5**
Upper Left Lon: **-170**
Lower Right Lat: **10**
Lower Right Lon: **-50**
Temporal Information
Temporal Resolution: **Other**
Other: **Monthly but higher temporal (up to hourly) resolution available on short period**
Model Begin Date: **1991-01-01**
Model End Date: **2008-12-31**
Carbon Information
Dynamic Veg Pools: **8**
leaf
fine roots
heartwood below
heartwood above
sapwood below
sapwood above

Precipitation:
Source: **CRU-NCEP combinaison**
Temporal:
Temperature:
Source: **CRU-NCEP combinaison**
Temporal:
Humidity: (Relative, Specific, or Vapor Pressure Deficit)
Source: **CRU-NCEP combinaison**
Temporal:
Wind Speed:
Source: **CRU-NCEP combinaison**
Temporal:
Solar Radiation:
Source: **CRU-NCEP combinaison**
Temporal:
Vegetation Distribution/Properties:
Type: **Fixed Actual**
Source: **dynamic land use change based on Ramankutty and Hyde**

Gross Primary Productivity (GPP)
Calc Method: **Enzyme Kinetic Model**
Function(s) Used: **Air Temperature (Tair - Near surface temperature)**
Soil Moisture (SoilMoist)
Surface Incident Shortwave Radiation (SWDown)
Relative Humidity
CO_2 (CO2air)
Leaf Nitrogen (TotLeafNit)
leaf age
Heterotrophic Respiration (HeteroResp)
Calc Method: **First or Greater Order Model**
Autotrophic Respiration (AutoResp)
Calc Method: **Explicitly Calculated (e.g. SiBCASA)**
Function(s) Used: **Air Temperature (Tair - Near surface temperature)**
Ecosystem Respiration (EcoResp=AutoResp+HeteroResp)
Calc Method: **Autotropic Respiration+Heterotrophic Respiration (EcoResp)**
Net Primary Production (NPP)
Calc Method: **GPP - Autotrophic Respiration**
Net Ecosystem Exchange (NEE)
Calc Method: **GPP - Ecosystem Respiration**
Total Evapotranspiration (Evap)
Function(s) Used: **Air Temperature (Tair - Near surface temperature)**
Soil Temperature (SoilTmp)
Precipitation (Rain+Snow)
Soil Moisture (SoilMoist)
Surface Incident Shortwave Radiation (SWDown)
Surface Incident Longwave Radiation (LWDown)
Vapor Pressure Deficit
Soil Moisture (SoilMoist)
Function(s) Used: **Surface Runoff**
Subsurface Drainage
Soil Texture (sand, silt, clay)

	fruit
	carbohydrate reserves
Dynamic Soil Pools:	**8**
	metabolic litter above
	metabolic litter below
	structural litter above
	structural litter below
	coarse woody litter
	active soil carbon
	slow soil carbon
	passive soil carbon
Steady State Span:	**2000 years based on 1901-1910 clima**
Steady State Initial:	**1901-01-01**
Leaf Information	
Calc Method:	**Prognostic Canopy**
Function(s) Used:	**Air Temperature (Tair - Near surface temperature)**
	Soil Moisture (SoilMoist)
	Surface Incident Shortwave Radiation (SWDown)
	Surface Incident Longwave Radiation (LWDown)
	Vapor Pressure Deficit
	CO_2 (CO2air)
	Vegetation Carbon (TotLivCarb or some component)
Soil Layer Information	
Disturbance Information	
Disturbances by Uses	**From Observations**
Disturbances by Harvests	**From Simulations**

(Regional Inputs NA)

	Soil Temperature (SoilTmp)
	Precipitation (Rain+Snow)
	Surface Incident Shortwave Radiation (SWDown)
	Surface Incident Longwave Radiation (LWDown)
	Specific Humidity (Qair)
Other:	
Exported biomass from land use, soil and vegetation carbon pools, sensible heat flux, surface temperature, forcing climate parameters	

General Information	
Model ID/Extent:	**40/Site**
Model Acronym:	**ISAM**
Model Name:	**Integrated Science Assessment Model**
Institution Name:	**University of Illinois**
Institution URL:	**http://climate.atmos.uiuc.edu/atuljain**
Contact Name:	**Atul Jain**
Contact E-mail:	**jain1@uiuc.edu**
Cite as:	**Yang, X., V. Wittig, A. Jain, W. Post, 2009: Integration of Nitrogen Dynamics into a Global Terrestrial Ecosystem Model, Global Biogeochemical Cycles, doi:10.1029/2009GB003519 (in press). Jain, A. K., X. Yang, H. Kheshgi, A.D. McGuire, W.P. Post, Kicklighter, 2009: Nitrogen Attenuation of Terrestrial Carbon Cycle Response to Global Environmental Factors, Global Biogeochemical Cycles, doi:10.1029/2009GB003519 (in press).**
Temporal Information	
Temporal Resolution:	**Half-hourly**
Model Begin Date:	**1900-01-01**
Model End Date:	**2007-12-31**
Carbon Information	
Dynamic Veg Pools:	**5**
	ground vegetation foliage
	ground vegetation root
	non-woody tree parts
	above ground woody parts
	tree roots
Leaf Information	
Calc Method:	**LAI Specified with Remotely Sensed Product**
Function(s) Used:	**Air Temperature (Tair - Near surface temperature)**
	Soil Temperature (SoilTmp)
	Precipitation (Rain+Snow)
	Soil Moisture (SoilMoist)
	Surface Incident Shortwave Radiation (SWDown)

Gross Primary Productivity (GPP)	
Calc Method:	**Stomatal Conductance Model**
Function(s) Used:	**Air Temperature (Tair - Near surface temperature)**
	Soil Temperature (SoilTmp)
	Precipitation (Rain+Snow)
	Soil Moisture (SoilMoist)
	Surface Incident Shortwave Radiation (SWDown)
	Surface Incident Longwave Radiation (LWDown)
	Specific Humidity (Qair)
	Actual Evaporation (Evap)
	Potential Evaporation (PotEvap)
	CO_2 (CO2air)
	Soil Carbon (TotSoilCarb or some component)
	Vegetation Carbon (TotLivCarb or some component)
	Soil Nitrogen (TotSoilNit)
	Leaf Nitrogen (TotLeafNit)
	LAI
Heterotrophic Respiration (HeteroResp)	
Calc Method:	**Explicitly Calculated**
Function(s) Used:	**Air Temperature (Tair - Near surface temperature)**
	Soil Temperature (SoilTmp)
	Precipitation (Rain+Snow)
	Soil Moisture (SoilMoist)
	Soil Carbon (TotSoilCarb or some component)
	Soil Nitrogen (TotSoilNit)
Autotrophic Respiration (AutoResp)	
Calc Method:	**Explicitly Calculated (e.g. SiBCASA)**
Function(s) Used:	**Air Temperature (Tair - Near surface temperature)**
	Soil Temperature (SoilTmp)
	Soil Moisture (SoilMoist)
	Vegetation Carbon (TotLivCarb or some component)
	Leaf Nitrogen (TotLeafNit)

	Surface Incident Longwave Radiation (LWDown) **Specific Humidity (Qair)** **Actual Evaporation (Evap)** **Potential Evaporation (PotEvap)** **CO_2 (CO2air)** **Soil Carbon (TotSoilCarb or some component)** **Vegetation Carbon (TotLivCarb or some component)** **Soil Nitrogen (TotSoilNit)** **Leaf Nitrogen (TotLeafNit)** **LAI**		**GPP** **Ecosystem Respiration (EcoResp=AutoResp+HeteroResp)** Calc Method: **Autotropic Respiration+Heterotrophic Respiration (EcoResp)** **Net Primary Production (NPP)** Calc Method: **GPP - Autotrophic Respiration** **Net Ecosystem Exchange (NEE)** Calc Method: **NPP - Heterotropic Respiration** **Total Evapotranspiration (Evap)** Function(s) Used: **Air Temperature (Tair - Near surface temperature)** **Soil Temperature (SoilTmp)** **Precipitation (Rain+Snow)** **Soil Moisture (SoilMoist)** **Surface Incident Shortwave Radiation (SWDown)** **Surface Incident Longwave Radiation (LWDown)** **Specific Humidity (Qair)** **Actual Evaporation (Evap)** **Potential Evaporation (PotEvap)** **Soil Texture** **Soil Moisture (SoilMoist)** Function(s) Used: **Surface Runoff** **Subsurface Drainage** **Hydraulic Redistribution** **Water Table** **Soil Texture (sand, silt, clay)** **Air Temperature (Tair - Near surface temperature)** **Soil Temperature (SoilTmp)** **Precipitation (Rain+Snow)** **Surface Incident Shortwave Radiation (SWDown)** **Surface Incident Longwave Radiation (LWDown)** **Actual Evaporation (Evap)** **Potential Evaporation (PotEvap)**
Soil Layer Information Soil Layers: **10** **1.75 cm** **2.76 cm** **4.55 cm** **7.5 cm** **12.36 cm** **20.38 cm** **33.6 cm** **55.4 cm** **91.3 cm** **111.37 cm** Soil Texture(s): **Variable Texture** **Carbon Dependent** **Disturbance Information** Disturbances by Fires **From Observations** Disturbances by Uses **From Observations** Disturbances by Harvests **From Observations**		
General Information Model ID/Extent: **41/Site** Model Acronym: **SSiB2** Model Name: **Simplified Simple Biosphere Model** Institution Name: **Princeton University** Institution URL: Contact Name: **Alok Sahoo** Contact E-mail: **aksahoo2004@gmail.com** Cite as: **Xue, Y., P. J. Sellers, J.L. Kinter III, and J. Shukla, 1991: A simplified biosphere model for global climate studies. J. Climate, 4, 345-364. Xue, Y., F. J. Zeng, and C.A. Schlosser, 1996c: SSiB and its sensitivity to soil properties --- a case study using HAPEX-Mobilhy data. Global & Planetary Change, 13, 183-194. Zhan, X., Yongkang Xue, G. J. Collatz, 2003: An analytical approach for estimating CO2 and heat fluxes over the Amazonian region. Ecological Modeling. 162, 97-117.** **Temporal Information** Temporal Resolution: **Half-hourly** Model Begin Date: **1973-01-01** Model End Date: **2007-12-31** **Soil Layer Information** Soil Layers: **3** **0-2 cm** **3-150 cm** **151-350 cm** Soil Texture(s): **Variable Texture**	**(Regional Inputs NA)**	**Gross Primary Productivity (GPP)** Calc Method: **Stomatal Conductance Model** Function(s) Used: **Air Temperature (Tair - Near surface temperature)** **Soil Moisture (SoilMoist)** **Surface Incident Shortwave Radiation (SWDown)** **Relative Humidity** **CO_2 (CO2air)** **LAI** **fPAR** **Autotrophic Respiration (AutoResp)** Calc Method: **Explicitly Calculated (e.g. SiBCASA)** Function(s) Used: **Air Temperature (Tair - Near surface temperature)** **Soil Moisture (SoilMoist)** **Surface Incident Shortwave Radiation (SWDown)** **Relative Humidity** **CO_2 (CO2air)** **LAI** **fPAR** **Total Evapotranspiration (Evap)** Function(s) Used: **Air Temperature (Tair - Near surface temperature)** **Soil Temperature (SoilTmp)** **Soil Moisture (SoilMoist)** **Surface Incident Shortwave Radiation (SWDown)** **Surface Incident Longwave Radiation (LWDown)** **Vapor Pressure Deficit** **Soil Texture**

		Soil Moisture (SoilMoist) Function(s) Used: **Surface Runoff** **Subsurface Drainage** **Water Vapor Diffusion through Soil** **Hydraulic Redistribution** **Soil Texture (sand, silt, clay)** **Air Temperature (Tair - Near surface temperature)** **Soil Temperature (SoilTmp)** **Surface Incident Shortwave Radiation (SWDown)** **Surface Incident Longwave Radiation (LWDown)** **Specific Humidity (Qair)** **Actual Evaporation (Evap)** **Other:** snow water equivalent, soil temperature, canopy temperature, sensible heat flux, momentum flux.
General Information Model ID/Extent: **43/Site** Model Acronym: **Agro-IBIS** Model Name: **Agricultural version of the Integrated Biosphere Simulator** Institution Name: **University of Wisconsin-Madison** Institution URL: **N/A** Contact Name: **Chris Kucharik** Contact E-mail: **kucharik@wisc.edu** Cite as: **Kucharik, C.J. and T.E. Twine (2007). Residue, respiration, and residuals: Evaluation of a dynamic agroecosystem model using eddy flux measurements and biometric data. Agricultural and Forest Meteorology 146, 134-158, doi:10.1016/j.agrformet.2007.05.011. Kucharik, C.J. (2003). Evaluation of a process-based agro-ecosystem model (Agro-IBIS) across the U.S. cornbelt: simulations of the inter-annual variability in maize yield. Earth Interactions 7, 1-33.** **Temporal Information** Temporal Resolution: **Half-hourly** Model Begin Date: **1990-01-01** Model End Date: **2007-01-01** **Carbon Information** Dynamic Veg Pools: **4** **leaf carbon** **stem carbon** **root carbon** **grain carbon (crops)** Dynamic Soil Pools: **7** **decomposable plant material** **resistant plant material** **structural plant material** **microbial biomass** **protected organic matter (slow C pool)** **non-protected organic matter (slow C pool)** **stabilized soil organic matter (passive C pool)** Steady State Span: **18500101-19791231** Steady State Initial: **1980-01-01** **Leaf Information** Calc Method: **Prognostic Canopy** Function(s) Used: **Air Temperature (Tair - Near surface temperature)** **Soil Temperature (SoilTmp)** **Precipitation (Rain+Snow)** **Soil Moisture (SoilMoist)** **Surface Incident Shortwave Radiation (SWDown)** **Surface Incident Longwave Radiation (LWDown)** **Vapor Pressure Deficit**	**(Regional Inputs NA)**	**Gross Primary Productivity (GPP)** Calc Method: **Enzyme Kinetic Model** Function(s) Used: **Air Temperature (Tair - Near surface temperature)** **Precipitation (Rain+Snow)** **Soil Moisture (SoilMoist)** **Surface Incident Shortwave Radiation (SWDown)** **Surface Incident Longwave Radiation (LWDown)** **Vapor Pressure Deficit** **Actual Evaporation (Evap)** **CO_2 (CO2air)** **LAI** **fPAR** **Heterotrophic Respiration (HeteroResp)** Calc Method: **First or Greater Order Model** **Autotrophic Respiration (AutoResp)** Calc Method: **Explicitly Calculated (e.g. SiBCASA)** Function(s) Used: **Air Temperature (Tair - Near surface temperature)** **Soil Temperature (SoilTmp)** **Precipitation (Rain+Snow)** **Soil Moisture (SoilMoist)** **Surface Incident Shortwave Radiation (SWDown)** **Surface Incident Longwave Radiation (LWDown)** **Vegetation Carbon (TotLivCarb or some component)** **Ecosystem Respiration (EcoResp=AutoResp+HeteroResp)** Calc Method: **Autotropic Respiration+Heterotrophic Respiration (EcoResp)** **Net Primary Production (NPP)** Calc Method: **GPP - Autotrophic Respiration** **Net Ecosystem Exchange (NEE)** Calc Method: **NPP - Heterotropic Respiration** **Total Evapotranspiration (Evap)** Function(s) Used: **Air Temperature (Tair - Near surface temperature)** **Soil Temperature (SoilTmp)** **Precipitation (Rain+Snow)** **Soil Moisture (SoilMoist)** **Surface Incident Shortwave Radiation (SWDown)** **Surface Incident Longwave Radiation (LWDown)** **Specific Humidity (Qair)** **Soil Texture** **Soil Moisture (SoilMoist)** Function(s) Used: **Surface Runoff** **Subsurface Drainage** **Irrigation** **Organic Matter Content**

	CO_2 (CO2air) **Soil Carbon (TotSoilCarb or some component)** **Vegetation Carbon (TotLivCarb or some component)** **Soil Layer Information** Soil Layers: **11** **0-5 cm** **5-10 cm** **10-20 cm** **20-30 cm** **30-40 cm** **40-60 cm** **60-80 cm** **80-100 cm** **100- 150 cm** **150-200 cm** **200-250 cm** Soil Texture(s): **Variable Texture** **Texture Classes** **Disturbance Information** Disturbances by Crops **From Observations** Disturbances by Harvests **From Observations**		**Hydraulic Redistribution** **Soil Texture (sand, silt, clay)** **Air Temperature (Tair - Near surface temperature)** **Soil Temperature (SoilTmp)** **Precipitation (Rain+Snow)** **Surface Incident Shortwave Radiation (SWDown)** **Specific Humidity (Qair)** **Other:** crop yield; harvest index; nitrogen uptake by crops; nitrogen leaching;
General Information Model ID/Extent: **44/Site** Model Acronym: **TRIPLEX-Flux** Model Name: **TRIPLEX-Flux** Institution Name: **University of Quebec at Montreal** Institution URL: **www.crc.uqam.ca** Contact Name: **Changhui Peng** Contact E-mail: **peng.changhui@uqam.ca** Cite as: **1) Zhou, X., Peng, C., Dang, Q.-L., Sun, J., Wu, H. and Hua, D., (2008) Simulating carbon exchange in Canadian Boreal forests: I. Model structure, validation, and sensitivity analysis. Ecol Model, 219:287-299. 2)Sun, J., Peng, C., McCaughey, H., Zhou, X., Thomas, V., Berninger, F., St-Onge, B. and Hua, D., (2008) Simulating carbon exchange of Canadian boreal forests: II. Comparing the carbon budgets of a boreal mixedwood stand to a black spruce forest stand. Ecol Model, 219:276-286.** **Temporal Information** Temporal Resolution: **Half-hourly** Model Begin Date: **1992-01-01** Model End Date: **2006-12-31**	**(Regional Inputs NA)**	**Gross Primary Productivity (GPP)** Calc Method: **Stomatal Conductance Model** Function(s) Used: **Surface Incident Longwave Radiation (LWDown)** **Specific Humidity (Qair)** **Potential Evaporation (PotEvap)** **CO_2 (CO2air)** **Vegetation Carbon (TotLivCarb or some component)** **LAI** **fPAR** **Heterotrophic Respiration (HeteroResp)** Calc Method: **First or Greater Order Model** **Autotrophic Respiration (AutoResp)** Calc Method: **Assumed Fraction of Annual GPP** **Ecosystem Respiration (EcoResp=AutoResp+HeteroResp)** Calc Method: **Autotropic Respiration+Heterotrophic Respiration (EcoResp)** **Net Primary Production (NPP)** Calc Method: **Assumed Fraction of Instanteous GPP** **Net Ecosystem Exchange (NEE)** Calc Method: **GPP - Ecosystem Respiration** **Total Evapotranspiration (Evap)** Function(s) Used: **Vapor Pressure Deficit** **Soil Moisture (SoilMoist)** Function(s) Used: **Vapor Pressure Deficit**
General Information Model ID/Extent: **45/Site** Model Acronym: **LoTEC** Model Name: **Local Terrestrial Ecosystem Carbon** Institution Name: **Oak Ridge National Laboratory** Institution URL: Contact Name: **Anthony King** Contact E-mail: **kingaw@ornl.gov** Cite as: **Hanson PJ, Amthor JS, Wullschleger SD et al. (2004) Oak forest carbon and water 7 simulations: model intercomparisons and evaluations against independent data. 8 Ecological Monographs, 74, 443-489.** **Temporal Information** Temporal Resolution: **Half-hourly** Model Begin Date: **1991-01-01** Model End Date: **2009-12-31** **Carbon Information** Dynamic Veg Pools: **4** **Stem carbon** **Leaf carbon**	**(Regional Inputs NA)**	**Gross Primary Productivity (GPP)** Calc Method: **Enzyme Kinetic Model** Function(s) Used: **Air Temperature (Tair - Near surface temperature)** **Soil Moisture (SoilMoist)** **Surface Incident Shortwave Radiation (SWDown)** **Relative Humidity** **CO_2 (CO2air)** **Heterotrophic Respiration (HeteroResp)** Calc Method: **Explicitly Calculated** Function(s) Used: **Soil Temperature (SoilTmp)** **Soil Moisture (SoilMoist)** **Soil Carbon (TotSoilCarb or some component)** **Autotrophic Respiration (AutoResp)** Calc Method: **Explicitly Calculated (e.g. SiBCASA)** Function(s) Used: **Air Temperature (Tair - Near surface temperature)** **Soil Temperature (SoilTmp)** **Soil Moisture (SoilMoist)**

	Coarse root carbon **Fine root carbon** Dynamic Soil Pools: **4** **DPM (decomposable plant materials)** **RPM (resistant plant materials)** **Microbial biomass** **Humus** Static Soil Pools: **1** **Inert organic matter** **Leaf Information** Calc Method: **Prognostic Canopy** Function(s) Used: **Air Temperature (Tair - Near surface temperature)** **Soil Layer Information** Soil Layers: **14** **0-5cm** **5-10cm** **10-15cm** **15-20cm** **20-25cm** **25-30cm** **30-40cm** **40-50cm** **50-75cm** **75-100cm** **100-150cm** **150-200cm** **200-300cm** **300-400cm** Soil Texture(s): **Variable Texture**		**Vegetation Carbon (TotLivCarb or some component)** **GPP** **Ecosystem Respiration (EcoResp=AutoResp+HeteroResp)** Calc Method: **Autotropic Respiration+Heterotrophic Respiration (EcoResp)** **Net Primary Production (NPP)** Calc Method: **GPP - Autotrophic Respiration** **Net Ecosystem Exchange (NEE)** Calc Method: **NPP - Heterotropic Respiration** **Total Evapotranspiration (Evap)** Function(s) Used: **Air Temperature (Tair - Near surface temperature)** **Soil Moisture (SoilMoist)** **Surface Incident Shortwave Radiation (SWDown)** **Relative Humidity** **Soil Texture** **Note: only includes transpiration and evaporation of canopy water** **Soil Moisture (SoilMoist)** Function(s) Used: **Subsurface Drainage** **Soil Texture (sand, silt, clay)** **Precipitation (Rain+Snow)**
General Information Model ID/Extent: **46/Site** Model Acronym: **LM3V** Model Name: **Dynamic Vegetation Land Model LM3V** Institution Name: **Princeton University** Institution URL: Contact Name: **Ni Golaz** Contact E-mail: **ngolaz@princeton.edu** Cite as: **Shevliakova, E., S. W. Pacala, S. Malyshev, G. C. Hurtt, P. C. D. Milly, J. P. Caspersen, L. T. Sentman, J. P. Fisk, C. Wirth and C. Crevoisier, 2009, Carbon cycling under 300 years of land use change: Importance of the secondary vegetation sink: Global Biogeochem. Cycles, v. 23, p. GB2022, doi:10.1029/2007/GB003176.** **Temporal Information** Temporal Resolution: **Other** Other: **3-hourly with some variables half-hourly** Model Begin Date: **0000-00-00** Model End Date: **0000-00-00** **Carbon Information** Dynamic Veg Pools: **5** **leaf biomass** **virtual leaf biomass** **root biomass** **sapwood biomass** **heartwood biomass** Dynamic Soil Pools: **2** **intermediate pool of fast soil carbon** **intermediate pool of slow soil carbon** **Leaf Information** Calc Method: **Prognostic Canopy** Function(s) Used: **Specific Humidity (Qair)** **LAI** **Other(s) (please specify):** **Soil Layer Information** Soil Texture(s): **Variable Texture** **Bucket model with one bucket** **Disturbance Information**	**(Regional Inputs NA)**	**Gross Primary Productivity (GPP)** Calc Method: **Stomatal Conductance Model** Function(s) Used: **Air Temperature (Tair - Near surface temperature)** **Soil Moisture (SoilMoist)** **Surface Incident Shortwave Radiation (SWDown)** **Specific Humidity (Qair)** **Actual Evaporation (Evap)** **CO_2 (CO2air)** **Vegetation Carbon (TotLivCarb or some component)** **LAI** **Farquhar photosynthesis with water limit, light limit and enzyme limit** **Heterotrophic Respiration (HeteroResp)** Calc Method: **Explicitly Calculated** **Autotrophic Respiration (AutoResp)** **Ecosystem Respiration (EcoResp=AutoResp+HeteroResp)** Calc Method: **Autotropic Respiration+Heterotrophic Respiration (EcoResp)** **Net Primary Production (NPP)** Calc Method: **GPP - Autotrophic Respiration** **Net Ecosystem Exchange (NEE)** Calc Method: **NPP - Heterotropic Respiration** **Total Evapotranspiration (Evap)** Function(s) Used: **Air Temperature (Tair - Near surface temperature)** **Precipitation (Rain+Snow)** **Soil Moisture (SoilMoist)** **Surface Incident Shortwave Radiation (SWDown)** **Surface Incident Longwave Radiation (LWDown)** **Specific Humidity (Qair)** **Soil Texture** **Soil Moisture (SoilMoist)** Function(s) Used: **Surface Runoff** **Soil Texture (sand, silt, clay)** **Specific Humidity (Qair)**

Disturbances by Fires	**From Simulations**		
Other Disturbances:	**Natural mortality is simulated. Model has landuse but not used in site-synthesi**		