

TEAM Vegetation - Trees & Lianas Monitoring Protocol Metadata

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The TEAM Network of Conservation International funds and coordinates the systematic monitoring of biodiversity through a network of tropical field stations, to quantify and forecast changes in biodiversity at local, regional and global scales. TEAM aims to understand both the underlying dynamics of biodiversity, and the responses of biodiversity to major drivers of change, particularly changes in climate and land use/land cover. The TEAM Network members recognize that achieving this goal requires the coordination of an integrated and systematic sampling program at multiple spatial and temporal scales. Further, to maximize the utility of TEAM data for change detection and for informing the development of sound conservation strategies, rapid dissemination of TEAM data to the global scientific and conservation communities is crucial. Thus, the TEAM Network is committed to making TEAM data globally accessible to the scientific and conservation communities and to the general public.

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"All data in this publication were provided by the Tropical Ecology Assessment and Monitoring (TEAM) Network, a collaboration between Conservation International, the Missouri Botanical Garden, the Smithsonian Institution, and the Wildlife Conservation Society, and partially funded by these institutions, the Gordon and Betty Moore Foundation, and other donors."

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10. **Notices.** Notice under this Agreement shall only be deemed to have been sufficiently given to Conservation International when served personally, sent by U.S. First-Class Registered or Certified Mail or by expedited delivery service with return receipt requested, addressed at the addresses set forth below.

If to Conservation International Foundation

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General Information

Vegetation - Trees & Lianas Metadata Version 1.5. This is a Metadata File (**Vegetation - Trees & Lianas-Metadata.1.5.pdf**) for the TEAM Vegetation - Trees & Lianas Monitoring Protocol data. Data are available for download at the TEAM Network website (www.teamnetwork.org). The purpose of this Metadata File is to provide the data user with more information to help them understand and utilize the data sets they download. Suggestions on improving the format of the Metadata File and the query output format can be sent to team-webmaster@teamnetwork.org.

Abstract

The Tropical Ecology, Assessment and Monitoring (TEAM) Network is a program in the program coordinated from within the Science and Knowledge Division at Conservation International (CI). The TEAM Network's mission is to monitor long-term trends in biodiversity through a network of tropical field stations, providing an early warning system on the status of biodiversity that can effectively guide conservation action. The TEAM Network conducts research through a global network of field stations in tropical and sub-tropical forests using a standardized methodology. To study trees the TEAM Network will focus on both, tropical forest assessment and monitoring. The assessment will be part of the whole vegetation assessment that primarily addresses differences among sites within a region or across regions. Sampling will be conducted in both tropical and subtropical forested regions, focusing on the following points: (1) Difference of forest biomass among forests, (2) Difference of forest structure, growth and turnover among forests and (3) Difference of forest community composition among different forests. Monitoring will be concerned with trends and fluctuations over time within sites, looking for correlation between the indicators and local process (human disturbance) as well as global processes (atmospheric and climate trends and fluctuations). Monitoring will focus on how do these vegetation variables change over time: Forest structure, growth, turnover, phenology, and community composition. The full Vegetation Protocol is available here: <http://www.teamnetwork.org/protocols/bio/vegetation>

Keywords

Aboveground Biomass
Forest Structure
Forest Dynamics and Turnover
Phenology
Community Composition

TEAM Network Partner Institutions

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Geographic Coverage

The TEAM Vegetation Monitoring Protocol (<http://www.teamnetwork.org/protocols/bio/vegetation>) describes the spatial arrangement for tree and liana measurements. Individual tree and liana latitude and longitude Cartesian coordinates as well as a latitude and longitude (Datum: WGS84) locations when possible. The latitude and longitude coordinates for the 1ha plots at each TEAM Site are listed in the table below. Each column has the following definition: Name: a two letter code for the protocol, a 2-3 letter code for the TEAM Site and a number for the 1ha plot; 1ha Plot Coordinate: defines the particular corner of the 1ha plot (i.e., the 0,0 corner as specified in the protocol); Longitude: Datum - WGS84; Latitude: Datum - WGS-84; Collection Date: Date when the 1ha Plot Coordinate was collected.

Barro Colorado Nature Monument - Soberania National Park TEAM Site

Name	1ha Plot Coordinate	Longitude	Latitude	CollectionDate
VG-BCI-6	0,0	-79.74438574165106	9.15660995990038	2012-03-22
VG-BCI-3	0,0	-79.77443662472069	9.200405236333609	2012-03-23
VG-BCI-1	0,0	-79.85346715897322	9.105386976152658	2012-04-09
VG-BCI-4	0,0	-79.74066954106092	9.168865140527487	2012-03-28
VG-BCI-2	0,0	-79.86121916212142	9.158292459324	2012-05-01
VG-BCI-5	0,0	-79.71263433806598	9.146816963329911	2012-03-28

Bukit Barisan TEAM Site

Name	1ha Plot Coordinate	Longitude	Latitude	CollectionDate
VG-BBS-2	0,0	104.40137917	-5.67447863	2010-09-30
VG-BBS-3	0,0	104.40137917	-5.61628793	2010-09-30
VG-BBS-4	0,0	104.4828133	-5.64433537	2010-09-30
VG-BBS-5	0,0	104.43636926	-5.62738457	2010-09-30
VG-BBS-6	0,0	104.49453531	-5.68786293	2010-09-30
VG-BBS-1	0,0	104.41399067	-5.64635684	2010-09-30

Bwindi Impenetrable Forest TEAM Site

Name	1ha Plot Coordinate	Longitude	Latitude	CollectionDate
VG-BIF-1	0,0	29.6970333	-0.9132334	2009-11-23
VG-BIF-2	0,0	29.7260666	-0.8930833	2009-11-23
VG-BIF-3	0,0	29.7063833	-1.0125	2009-11-23
VG-BIF-4	0,0	29.6390166	-1.0246833	2009-11-23
VG-BIF-5	0,0	29.7606833	-1.0573	2009-11-23
VG-BIF-6	0,0	29.7177333	-1.0953	2009-11-23

Caxiuana TEAM Site

Name	1ha Plot Coordinate	Longitude	Latitude	CollectionDate
VG-CAX-1	0,0	-51.45916	-1.70781	2011-05-27
VG-CAX-6	0,0	-51.4309	-1.72358	2011-05-27
VG-CAX-5	0,0	-51.59084	-1.78128	2011-05-27
VG-CAX-4	0,0	-51.52048	-1.75391	2011-05-27
VG-CAX-3	0,0	-51.51098	-1.73408	2011-05-27
VG-CAX-2	0,0	-51.48499	-1.72963	2011-05-27

Central Suriname Nature Reserve TEAM Site

Name	1ha Plot Coordinate	Longitude	Latitude	CollectionDate
VG-CSN-2	0,0	-56.1860075	4.6969741	2011-01-11
VG-CSN-1	0,0	-56.1877726	4.7380984	2011-01-11
VG-CSN-5	0,0	-56.20514	4.8133699	2011-01-11
VG-CSN-3	0,0	-56.1183967	4.8128766	2011-01-11

Cocha Cashu - Manu National Park TEAM Site

Name	1ha Plot Coordinate	Longitude	Latitude	CollectionDate
VG-COU-1	0,0	-71.3978222	-11.8870005	2011-09-13
VG-COU-2	0,0	-71.4249016	-11.8993577	2011-09-13
VG-COU-3	0,0	-71.2813285	-11.9371996	2011-09-13

Name	Iha Plot Coordinate	Longitude	Latitude	CollectionDate
VG-COU-4	0,0	-71.4024744	-11.904708	2011-09-13
VG-COU-5	0,0	-71.4086283	-11.8784896	2011-09-13
VG-COU-6	0,0	-71.2692159	-11.965529	2011-09-13
Korup National Park TEAM Site				
Name	Iha Plot Coordinate	Longitude	Latitude	CollectionDate
VG-KRP-1	0,0	8.85385	5.06505	2011-11-09
VG-KRP-2	0,0	8.86735	5.08098	2011-11-09
VG-KRP-3	0,0	8.84137	5.07968	2011-11-09
VG-KRP-4	0,0	8.83203	5.06102	2011-11-09
VG-KRP-5	0,0	8.8376	5.03708	2011-11-09
VG-KRP-6	0,0	8.85833	5.03741	2011-11-09
Manaus TEAM Site				
Name	Iha Plot Coordinate	Longitude	Latitude	CollectionDate
VG-MAS-1	0,0	-59.9468382	-2.9289898	2010-11-30
VG-MAS-2	0,0	-59.9053463	-2.9698361	2010-11-30
VG-MAS-3	0,0	-59.9015673	-2.4066878	2010-11-30
VG-MAS-4	0,0	-59.794235	-2.4313394	2010-11-30
VG-MAS-5	0,0	-60.2098673	-2.6185037	2010-11-30
VG-MAS-6	0,0	-60.1093966	-2.5975461	2010-11-30
Nam Kading TEAM Site				
Name	Iha Plot Coordinate	Longitude	Latitude	CollectionDate
VG-NAK-1	0,0	104.27965	18.2985	2010-03-09
VG-NAK-2	0,0	104.27967	18.2985	2010-03-24
VG-NAK-3	0,0	104.15525	18.39701	2009-12-09
VG-NAK-4	0,0	104.16643	18.36779	2009-11-10
VG-NAK-5	0,0	104.10685	18.43812	2010-02-13
VG-NAK-6	0,0	104.12318	18.40492	2010-01-10
Nouabalé Ndoki TEAM Site				
Name	Iha Plot Coordinate	Longitude	Latitude	CollectionDate
VG-NNN-4	0,0	16.4659089	2.4014756	2010-03-11
VG-NNN-5	0,0	16.4283399	2.35894	2010-03-11
VG-NNN-6	0,0	16.360348	2.3551752	2010-03-11
VG-NNN-1	0,0	16.6207812	2.6572454	2010-03-11
VG-NNN-3	0,0	16.5348413	2.614436	2010-03-11
VG-NNN-2	0,0	16.5537878	2.6397392	2010-03-11
Pasoh Forest Reserve TEAM Site				
Name	Iha Plot Coordinate	Longitude	Latitude	CollectionDate
VG-PSH-1	0,0	102.18362	2.58797	--
VG-PSH-2	0,0	102.33218	3.05078	--
VG-PSH-3	0,0	102.33264	3.09845	--
VG-PSH-4	0,0	101.97991	3.11013	--
VG-PSH-6	0,0	101.97735	3.1628	--
VG-PSH-5	0,0	101.9806	3.19189	--
Ranomafana TEAM Site				
Name	Iha Plot Coordinate	Longitude	Latitude	CollectionDate
VG-RNF-1	0,0	47.5114	-21.12295	2010-12-29
VG-RNF-2	0,0	47.52052	-21.17866	2010-12-29
VG-RNF-3	0,0	47.410841	-21.21793	2010-12-29
VG-RNF-4	0,0	47.4533218	-21.2219612	2010-12-29
VG-RNF-5	0,0	47.40719	-21.30393	2010-12-29
VG-RNF-6	0,0	47.4457188	-21.3658431	2010-12-29
Udzungwa TEAM Site				
Name	Iha Plot Coordinate	Longitude	Latitude	CollectionDate
VG-UDZ-1	0,0	36.8860650460001	-7.71113257399998	2009-11-27
VG-UDZ-2	0,0	36.873368214	-7.69493397499997	2009-11-28
VG-UDZ-3	0,0	36.8956057340001	-7.77724184299996	2009-11-28
VG-UDZ-4	0,0	36.8707778880001	-7.75978012899998	2009-11-28
VG-UDZ-5	0,0	36.835541747	-7.83170386299997	2009-11-26
VG-UDZ-6	0,0	36.8632279890001	-7.83826772199996	2009-11-26
Volcán Barva TEAM Site				

Name	1ha Plot Coordinate	Longitude	Latitude	CollectionDate
VG-VB-1	0,0	-84.0200572927	10.41687655	2009-01-28
VG-VB-2	0,0	-84.037524144	10.403171239	2008-06-05
VG-VB-3	0,0	-84.0476422415	10.3160400918	2008-05-08
VG-VB-4	0,0	-84.0572281091	10.3447163271	2008-05-30
VG-VB-5	0,0	-84.1068322137	10.1823432219	2009-05-26
VG-VB-6	0,0	-84.1080677857	10.1351986936	2009-05-25
VG-VB-7	0,0	-84.0552816144	10.2678697806	2008-10-21
VG-VB-8	0,0	-84.0850028149	10.2403425582	2009-11-13
VG-VB-9	0,0	-84.00985772	10.43214216	2010-05-28

Yanachaga Chimillén National Park TEAM Site

Name	1ha Plot Coordinate	Longitude	Latitude	CollectionDate
VG-YAN-1	0,0	-75.2503069	-10.35049162	--
VG-YAN-2	0,0	-75.25653021	-10.3806513	--
VG-YAN-3	0,0	-75.28502173	-10.35418209	--
VG-YAN-4	0,0	-75.29446998	-10.37508504	--
VG-YAN-5	0,0	-75.32989584	-10.40999508	--
VG-YAN-6	0,0	-75.31577971	-10.42219729	--

Temporal Coverage

The temporal period for the TEAM Network Vegetation - Trees & Lianas Data Set is described below. This is the maximum temporal range. TEAM Site specific temporal ranges can be determined directly from the data.

Begin	2002-11-13
End	2012-08-22

Methods Information

DATA COLLECTION

One (1) ha plots The one (1) ha plot, a 100m by 100m square lot, is a permanent long-term monitoring vegetation plot. The one ha plots are part of the TEAM standardized protocol and serve to monitor aboveground biomass, forest growth and dynamics, forest structure and composition. A summarized description of the steps followed to study vegetation in the 1 ha plots are: 1. Randomly locate the 1 ha plot within the designated research areas. 2. Establishment of the 1 ha plot. 3. First census of all trees 10cm or greater and lianas within the 1 ha plots. 4. Collection of voucher specimens. 5. Re-census of the 1 ha plot (calibrate the diameter measurer and add the new recruits). A detailed methodology is described in the Vegetation Monitoring Protocol that can be found at: <http://www.teamnetwork.org/protocols/bio/vegetation>.

DATA RECORDING

The following forms have been designed to collect field data: 1. First census 2. New recruits 3. Re-census 4. Moving the POM The forms can be found at the TEAM Network site: <http://www.teamnetwork.org>. Field station herbaria are used as repository for voucher specimens from the TEAM protocol plots.

The complete TEAM Monitoring Vegetation - Trees & Lianas Protocol document can be found at: <http://www.teamnetwork.org/protocols/bio/vegetation>.

DATA MANAGEMENT

Refer to the "Data Management Protocol" and the "TEAM Monitoring Vegetation - Trees & Lianas Protocol" for data management topics related to the TEAM Vegetation - Trees & Lianas Protocol.

Vegetation - Trees & Lianas Data Attribute Information																																							
Attribute Value	Definition	Data Type	Example																																				
ID	Unique number to identify each data record in the database. This number provides a unique identifier for each record but is not necessarily sequential and should not be used for maintaining records across database versions.	numeric	55																																				
Observation Date	Date of tree and liana observation. {YYYY-MM-DD}	date	2002-11-13																																				
Family	Tree systematics.	string	Annon																																				
Genus	Tree systematics.	string	Bocageopsis																																				
Species	Tree systematics.	string	NA																																				
Names of Collectors	Name of the person who collected	string	S de Almeida																																				
Diameter	Tree diameter measurement. {cm} Data collected in Vegetation Protocol Version 1.3 do not meet these standards.	numeric	11.5																																				
POM Height	Height at which the Diameter measurement was taken. {m} Data collected in Vegetation Protocol Version 1.3 do not meet these standards.	numeric	1.3																																				
New Diameter	The new DBH associated with a new POM Height {cm} Data collected in Vegetation Protocol Version 1.3 do not meet these standards.	numeric	10.85																																				
New POM Height	A new POM Height is needed if the POM the previous census is no longer appropriate. {m} Data collected in Vegetation Protocol Version 1.3 do not meet these standards.	numeric	1.85																																				
Condition Codes	<p>Codes describing the tree and measurement observation:</p> <table border="1"> <tbody> <tr><td>B:</td><td>Buttresses</td></tr> <tr><td>C:</td><td>Stilt Roots</td></tr> <tr><td>D:</td><td>Damaged or Deformed</td></tr> <tr><td>E:</td><td>Estimated Diameter</td></tr> <tr><td>F:</td><td>Fluted</td></tr> <tr><td>G:</td><td>Prostrate</td></tr> <tr><td>H:</td><td>Branched Trunk</td></tr> <tr><td>I:</td><td>Uprooted</td></tr> <tr><td>J:</td><td>Inclined</td></tr> <tr><td>K:</td><td>Dead</td></tr> <tr><td>L:</td><td>Ladder Used</td></tr> <tr><td>N:</td><td>Trunk with Regrowth</td></tr> <tr><td>O:</td><td>Broken at the Base</td></tr> <tr><td>P:</td><td>Broken at the Trunk</td></tr> <tr><td>R:</td><td>Partial Crown Loss</td></tr> <tr><td>S:</td><td>Missing Bark</td></tr> <tr><td>T:</td><td>Tree Dying</td></tr> <tr><td>U:</td><td>Tree re-measured</td></tr> </tbody> </table>	B:	Buttresses	C:	Stilt Roots	D:	Damaged or Deformed	E:	Estimated Diameter	F:	Fluted	G:	Prostrate	H:	Branched Trunk	I:	Uprooted	J:	Inclined	K:	Dead	L:	Ladder Used	N:	Trunk with Regrowth	O:	Broken at the Base	P:	Broken at the Trunk	R:	Partial Crown Loss	S:	Missing Bark	T:	Tree Dying	U:	Tree re-measured	string	J,B
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	V: Current Measurement Less Than Last Year		
	Data collected in Vegetation Protocol Version 1.3 do not meet these standards.		
Sampling Period	There is 1 Sampling Periods in a calendar year for the Tree/Liana Protocol. The Sampling Periods are the year sampling occurred plus the number of the sampling period. For the first Sampling Period in 2007 the Sampling Period is "2007.01".	numeric	2007.01
Comments	Any comments on the observation or identification.	string	Parts of tree collected for identification
Data Level	Data Levels are currently being established for each TEAM Network product. Current datasets being distributed are Level 0 which implies that all data being distributed meet the minimum data standards defined in this metadata document as well as additional QA/QC rules applied to incoming data. We will expand the Data Levels and corresponding definitions as more synthetic products are developed and additional data curation occur.	string	Level 0
Sampling Unit Name	Unique code to identify the tree or liana point(Protocol-Site-Block-TreeNumber or Protocol-Site-Block-LianaNumber). Note that Sampling Unit Names with a two digit decimal denote trees that have multiple stems. (e.g. VT-CX-1-3.01, VT-CX-1-3.02, etc).	string	VT-CX-6-001
Latitude	Latitude of the tree or Liana Point in decimal degrees.	numeric	1.78459044
Longitude	Longitude of the tree or Liana Point in decimal degrees.	numeric	-51.58924692
Spatial Method	Indicates whether the latitude and Longitude were collected via GPS (Collected) or were derived (Derived) analytically from the Block corner coordinates. {Collected, Derived}	numeric	Derived
Subplot Number	Number of the subplot.	numeric	10
1ha Plot X Coordinate	Point of intersection {in the X axis} where the tree was observed in the 1ha plot. {m}	numeric	2.95
1ha Plot Y Coordinate	Point of intersection {in the Y axis} where the tree was observed in the 1ha plot. {m}	numeric	2.81
Tree Number	Unique tree identification number.	numeric	1
Site Name	Name of TEAM Site.	string	Volcan Barva
1ha Plot Number	Number of the 1 ha plot.	numeric	6
Protocol Version	Name and number of the protocol used during the observation.	string	Vegetation Protocol 3.1
Data Set Creator Institution	Institution that produced the Data Set.	string	Museu Paraense Emilio Goeldi
Data Set Creator Scientist	Individual that produced the Data Set.	string	Samuel de Almeida
Data Set Contact	The primary contact for the Data Set. The Data Set Contacts email and other contact information	string	Museu Paraense Emilio Goeldi

can be found at: <http://www.teamnetwork.org/about/members>