RAINFOR – Tree Field Work Database Codes

FLAG 1: ALIVE STATUS (If the tree is dead, write "0" in this column)

a=   Alive normal, should be used by itself unless a tree is a recruit or a multiple stemmed individual

b=   Alive, broken stem/top & resprouting, or at least live phloem/xylem. Write in the comments column at what height the stem is broken.

c=   Alive, leaning by ≥10%. The leaning code cannot be used with the fallen code '**d**'.

d=   Alive, fallen (e.g. on ground)

e=   Alive, tree fluted or/fenestrated

f=   Alive, hollow

g=   Alive, rotten and or presence of bracket fungus

h=   Multiple stemmed individual. Each stem >99mm gets a number. Always use with another code - e.g. if a tree is broken and with multiple stems use '**bh**'.

i=   Alive, no leaves, few leaves

j=   Alive, burnt

k=   Alive, snapped < 1.3m (therefore the diameter at 1.3m is 0mm)

l=   Alive, has liana ≥10cm diameter on stem or in canopy

m=   Alive, covered by lianas. Use where canopy is at least 50% covered by lianas, even if no individual liana reaches 10cm diameter.

n=   New recruit. Always use with another code- e.g. if a tree is normal and new then use the code '**an**', if a tree is broken and a new recruit the code is '**bn**'.

o=   Alive, lightning damage

p=   Alive, cut

q=   Alive, peeling bark (bark loose/flaking)

s=   Alive, has a strangler

w=   Alive, has wound and/or cambium exposed

x=   Alive, elephant damage

y=   Alive, termite damage

z=   Alive, declining productivity (nearing death)

Note: *Tree Alive Status Codes* can be used together in any combination. The only exceptions are codes '**a**', '**c**' and '**d**'. Please read the notes when using these codes! If 'strangler', write it in the **comments column**.

FLAG 2: MODE OF DEATH (If the tree is alive, write "1" in this column)

All dead trees have two or three letter codes.

1) Physical mechanism of mortality (How the tree died)

a=   Standing

b=   Broken (snapped trunk)

c=   Uprooted (root tip-up)

d=   Standing or broken, probably standing (not uprooted)

e=   Standing or broken, probably broken (not uprooted)

f=   Standing or broken (not uprooted)

g=   Broken or uprooted, probably uprooted

h=   Broken or uprooted, probably broken

i=   Broken or uprooted (not standing)

k=   Vanished (found location, tree looked for but not found)

l=   Presumed dead (location of tree not found e.g. problems, poor maps, etc.

m=   Unknown

2) Number of trees in Mortality event

p=   Died alone

q=   One of multiple deaths

r=   Unknown

FLAG 2: MODE OF DEATH (continued…)

3) Killed or killer process

j= Anthropogenic
n= Burnt
o= Lightning
s= Unknown whether killed or killed
t= Killer of at least one other tree >10cm DBH
u= Killed, no more information
v= Killed by tree that died broken
w= Killed by another tree that uprooted
x= Killed by branches from dead standing tree
y= Killed by branches fallen from living tree
z= Killed by strangler
2= Killed by liana
3= Killed by strangler / liana weight [tree died broken or fallen]
4= Killed by strangler / liana competition [tree died standing]
5= Killed by elephant
6= Killed by termites
7= Killed by wind

Note: Select one code from each category. For example a dead tree that is standing, died alone and was killed by lighting would be '**apo**'.
For multiple deaths the numbers of trees that died should be recorded and written in the **comments column.**
For broken trees the height at which the breakage occurred should be recorded in the **comments column.**

FLAG 3: MEASUREMENT TECHNIQUE

0= Normal measurement, tape measurement
1= Relascope
2= Digital camera
3= Estimate
4= Ladder, with diameter tape
5= Unknown
6= Dendrometer

FLAG 4: POST-FIELD DATA MANAGEMENT

0= No retrospective modification
1= Extrapolated from previous measurements forwards or late measurements backwards
2= Corrected expected typographical error
3= Interpolated (two good measurements either side of a problem measurement)
4= Estimated using median growth rates for that size class
6= The POM was changed because it had to be, good measurement before
7= Zero growth rate assumed
8= Another transformation, see notes/ not clear what was done

Note: Only one measurement technique and one data post-field data management (Flag 4) code should be selected for each tree, except when a tree has POM change, then write "6" for POM change together with another code for Data Manipulation, e.g. "60".

FLAG 5: HEIGHT MEASUREMENT TECHNIQUE

Total Tree Height - Height should be recorded in meters and the height measurement code recorded in the Flag 5 column. If height was not measured, leave the height column and Flag 5 empty.

1= Estimated by eye.
2= Manually by trigonometry (clinometer).
3= Manually by trigonometry (clinometer), carefully trained.
4= Laser or ultrasonic distance to tree, electronic tilt sensor for angle.
5= Laser hypsometer from directly below crown, "last return" filter function.
6= Directly (e.g. climbing, cutting, adjacent tower).