

FORESTS IN CITIES COOLING STUDY | DATASHEET FOR CONDITION ASSESSMENT & TEMPERATURE SENSOR DEPLOYMENT

See data dictionary for term definitions.

Part A: To be filled out for all sensors					
City:	Plant Community (optional):				
Sensor Name:	Sensor Sun Exposure Estimate (circle): Full Sun (6+ hrs) Part Sun (4-6 hrs) Shade (<4 hrs)				
Deployment Date:	Canopy Type of Attached Tree (circle): Individual Interlocking				
Sensor Type (circle): Control Healthy Degraded	DBH of Attached Tree (cm):				
Habitat type:	Attachment Tree Species:				
Notes:					
Part B: Complete for natural area sensors only. Rating of 'Healthy' required for healthy sensor and rating of 'Degraded' required for degraded sensor.					
Dumping (circle): 0% 1-10% 11-25% 26-50% 51-75% 76-100%	Herbivore Damage (circle): Present Absent				
Indicator	3 Points (Good)	2 Points (Moderate)	1 Point (Poor)	Points	
1. Vertical Structure	<input type="checkbox"/> All strata present throughout and complex as appropriate for community type.	<input type="checkbox"/> Strata present but impacted or limited.	<input type="checkbox"/> Missing or highly impacted vertical structure appropriate for community type.	→	
2. Invasive Groundcover (circle range)	0% 1 - 10% <input type="checkbox"/> >=5	11 - 25 % <input type="checkbox"/> 3-4	26-50% 51-75% 76-100%	→	
3. Native woody species richness	<input type="checkbox"/> >80% native	<input type="checkbox"/> 50-80% native	<input type="checkbox"/> < 50% native	→	
4. Native tree & shrub proportion	0% 1 - 10% 11-25% <input type="checkbox"/> All classes present & distributed across the plot as appropriate for community type..	26-50%	51-75% 76-100%	→	
5. Canopy gaps (circle range)				→	
6. Native Woody Regeneration		<input type="checkbox"/> 1-2 classes present & distributed across the plot as appropriate for community type.	<input type="checkbox"/> No or very limited regrowth present for all classes as appropriate for community type.	→	
7. Tree health	<input type="checkbox"/> Mortality, pests/disease, & dieback <10% each.	<input type="checkbox"/> Max of 11-25% mortality, crown dieback, or pests/disease.	<input type="checkbox"/> >25% mortality, crown dieback, and/or pests/disease.	→	
Final Rating		Healthy (> 17 points) <input type="checkbox"/>	Moderate (14-17 points) <input type="checkbox"/>	Degraded (<14 points) <input type="checkbox"/>	Total Points (sum) ↓

Data Dictionary

Variable	Definition
PART A OF DATASHEET	
City	The name of the city the temperature sensor is being deployed in.
Sensor Name	The name assigned to the sensor. This is the name that is written on the sensor & that shows up in the HOB0 Connect App on the devices. E.q. NYC_C_1, MIA_D_2.
Deployment Date	The date the sensor was attached to the stem.
Sensor Type	The sensor type within the study design. Control, Healthy, or Degraded. This should match the middle part of the sensor name.
Habitat Type	Description of the 30m radius area as per the definitions outlined in the protocol. Upland Forest or Woodland, Forested Wetland, Mangrove Swamp. Appendix 2 of protocol for definitions.
Plant Community	Optional field to list the specific plant community. If known, the CEGL code can be entered.
Sensor Sun Exposure Estimate	An estimate of how much direct sun the sensor will receive per day. If the sensors are attached on the N side of the stem as instructed, they <u>should not receive full sun</u> . If sensors will be deployed in a location where they will be in direct sun, <u>additional shielding may be required</u> .
Canopy Type of Attached Tree	Indicates whether the canopy of the tree the sensor is attached to is <u>individual</u> : not touching the canopies of other nearby trees OR <u>interlocking</u> : overlapping with the canopies of nearby/adjacent trees.
DBH of Attached Tree (cm)	The diameter at breast height (4.5' /1.37m from the ground) of the stem the temperature sensor is attached to in cm
Species of Attached Tree	The <i>scientific name</i> OR <i>USDA Code</i> of the tree species the temperature sensor is attached to.
PART B OF DATASHEET	
Dumping ¹	The percent of the 30m radius area covered by dumping, such as large surface piles of debris, large amounts of residential waste, discarded tires, litter at abnormally high levels, etc. Small pieces of garbage at a site (e.g. a few candy wrappers) would not count, the point of this variable is to note dumping that exceeds small debris.
Herbivore Damage	Present or absence of visible damage to vegetation by herbivores.
Vertical Structure	Forest and woodland vertical structure within the 30m radius area. We are aware the presentation of a healthy vertical structure will vary by location and plant community so the interpretation of this variable should be appropriate for your locality. A good rating for this variable would be structurally complex as per the plant community. This may include overstory- w/multiple/varied stories- midstory, shrub, and herb/groundcover layers present and in sufficient density/coverage throughout the site; a moderate rating may have all strata but one or more are sparse or missing in portion of area; and a poor rating be missing one or more forest layers or have otherwise highly impacted structural complexity, such as overstory being limited to a single age/size class.
Invasive Groundcover ¹	The percent of the 30m radius area covered by invasive groundcover species. Consider specimens with foliage at or below DBH (4.5" / 1.37m from the ground). Invasiveness should be relevant to the geography.
Native woody species	The count of native tree and shrub species in the 30m radius.
Native tree & shrub %	The proportion of trees and shrubs in the 30m radius plot that are species native to the geography.
Canopy gaps	The percent of the 30m radius area that is not covered in tree canopy.
Native Woody Regeneration	Presence & distribution of native saplings (2-10cm), seedlings (1-2cm), & germinants <1cm) distributed within the 30m radius area.
Tree health	Refers to the proportion of stems that are dead, afflicted with pests, or are experiencing crown dieback within the 30m radius area. The proportion ranges for each rating are listed in the rubric above.

¹ For reference, 1% of a 30m radius circle is around 28m² – an area a little larger than a square with a 5m side.