

LARVAL SURVEYS FOR OPEN HABITATS



The Urban Malaria Control Program (UMCP), Dar es Salaam

WARD LEVEL mosquito larval habitat survey - Open habitats

WARD LEVEL mosquito larval habitat survey - Open habitats

Serial number of this form _____

Serial number on the map form _____

Date: ____/____/____

Municipality: _____

Ward: _____

MTAA: _____

10-cell unit: _____

GPS(UTM/WGS84): Northing _____ Easting _____

10-cell leader: _____

Habitat codes:

1: Puddles&tire tracks

5: Construction pits/foundations/man-made holes

9: Other agriculture

2: Swampy areas

6: Water storage container

10: Stream/river bed

3: Mangrove Swamp

7: Rice paddy

11: Pond

4: Drain/Ditch

8: Matuta

12: Other (describe below)

Plot ID	Habitat ID	Habitat type	Same habitat type from last visit? 1=Yes 2=No 3=First visit	Previous habitat type	Habitat description	House number	Wet?		Habitat perimeter			Plants			Water depth		Larval stage						Pupae		Comments	
							dry	Contains water	< 10 m	10-100 m	> 100 m	None	Short vegetation	Tall vegetation	Floating plants	< 0.5 m	> 0.5 m	Anoph.			Culex			Absent		Present
																		Absent	Early	Late	Absent	Early	Late			

New

How to fill in the data sheets

- Plot No.
 - House No.
 - Habitat ID.
- All **unique** and **continuous**
- example

2 habitat types in same plot



4: Drain

1: Puddle

Ward level - data sheet

WARD LEVEL mosquito larval habitat survey - Open habitats

Serial number of this form 0793

Serial number on the map form 0891

Date: 7 / 4 / 05

Municipality: Kinondoni Ward: Ndgumbi MTA: Vigaeni 10-cell unit: 38
GPS(UTM/WGS84): Northing _____ Easting _____ 10-cell leader: Omary Bauari

Habitat codes:

1: Puddles&tire tracks
2: Swampy areas
3: Mangrove Swamp
4: Drain/Ditch

5: Construction pits/foundations/man-made holes
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7: Rice paddy
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11: Pond
12: Other (describe below)

	Yes	No
Is there a map	☒	☐
Is the map up to date	☒	☐
Is the map filed	☒	☐

Plot ID	Habitat ID	Habitat type	Same habitat type from last visit? 1=Yes 2=No 3=First visit	Previous habitat type	Habitat description	House number	Wet?		Habitat perimeter			Plants				Water depth		Larval stage			Pupae		Comments
							dry	Contains water	< 10 m	10-100 m	> 100 m	None	Short vegetation	Tall vegetation	Floating plants	< 0.5 m	> 0.5 m	Absent	Early	Late	Absent	Early	
7	1	4	1	4	large drain with flowing water			X			X	X	X			X		X			X		Irrigating local agriculture
7	2	1	1	1	small open shallow puddle			X	X			X			X		X				X		beside the drain

Habitat type = 1 to 12 codes

Habitat ID = how many different habitats in one plot

Dry or No habitat ???



11: Pond

7: Rice field - dry habitat (with the potential of being a larval breeding site)

This document has been produced and made available by the Dar es Salaam Urban Malaria Control Programme. Contact: Urban Malaria Control Programme, City Medical Office of Health, City Council, P.O. Box 63320, Dar es Salaam, Tanzania, Phone: +255 22 212 1649

Wet / Dry / no habitat

- Both wet and dry sites need description



4: Drain & Ditches
Wet habitat
1.4.05



4: Drain & Ditches
Dry habitat
7.4.05

2 weeks of ward level data sheets

WARD LEVEL mosquito larval habitat survey - Open habitats

Municipality: Kinondoni Ward: Ndgumbi MTAA: Vigaeni 10-cell unit: 38
GPS(UTM/WGS84): Northing _____ Easting _____ 10-cell leader: Omary Bauari

Serial number of this form 0723
Serial number on the map form 0333
Date: 1 / 4 / 05

Habitat codes:

- | | | |
|------------------------|---|----------------------------|
| 1: Puddles&tire tracks | 5: Construction pits/foundations/man-made holes | 9: Other agriculture |
| 2: Swampy areas | 6: Water storage container | 10: Stream/river bed |
| 3: Mangrove Swamp | 7: Rice paddy | 11: Pond |
| 4: Drain/Ditch | 8: Matuta | 12: Other (describe below) |

Plot ID	Habitat ID	Habitat type	Same habitat type fr last visit? 1=Yes 2: 3=First visit	Previous habitat type	Habitat description	House number	Wet?		Habitat perimeter			Plants			Water depth		Larval stage			Pupae		Comments
							dry	Contains water	< 10 m	10-100 m	> 100 m	None	Short vegetation	Tall vegetation	Floating plants	< 0.5 m	> 0.5 m	Anoph.	Culex	Absent	Present	
3	1	4	1	4	water flowing = water tap on	22	X		X			X				X				X	X	inbetween the houses

Same code = same site habitat & no more man-made construction

WARD LEVEL mosquito larval habitat survey - Open habitats

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GPS(UTM/WGS84): Northing _____ Easting _____ 10-cell leader: Omary Bauari

Serial number of this form 0456
Serial number on the map form 0333
Date: 7 / 4 / 05

Habitat codes:

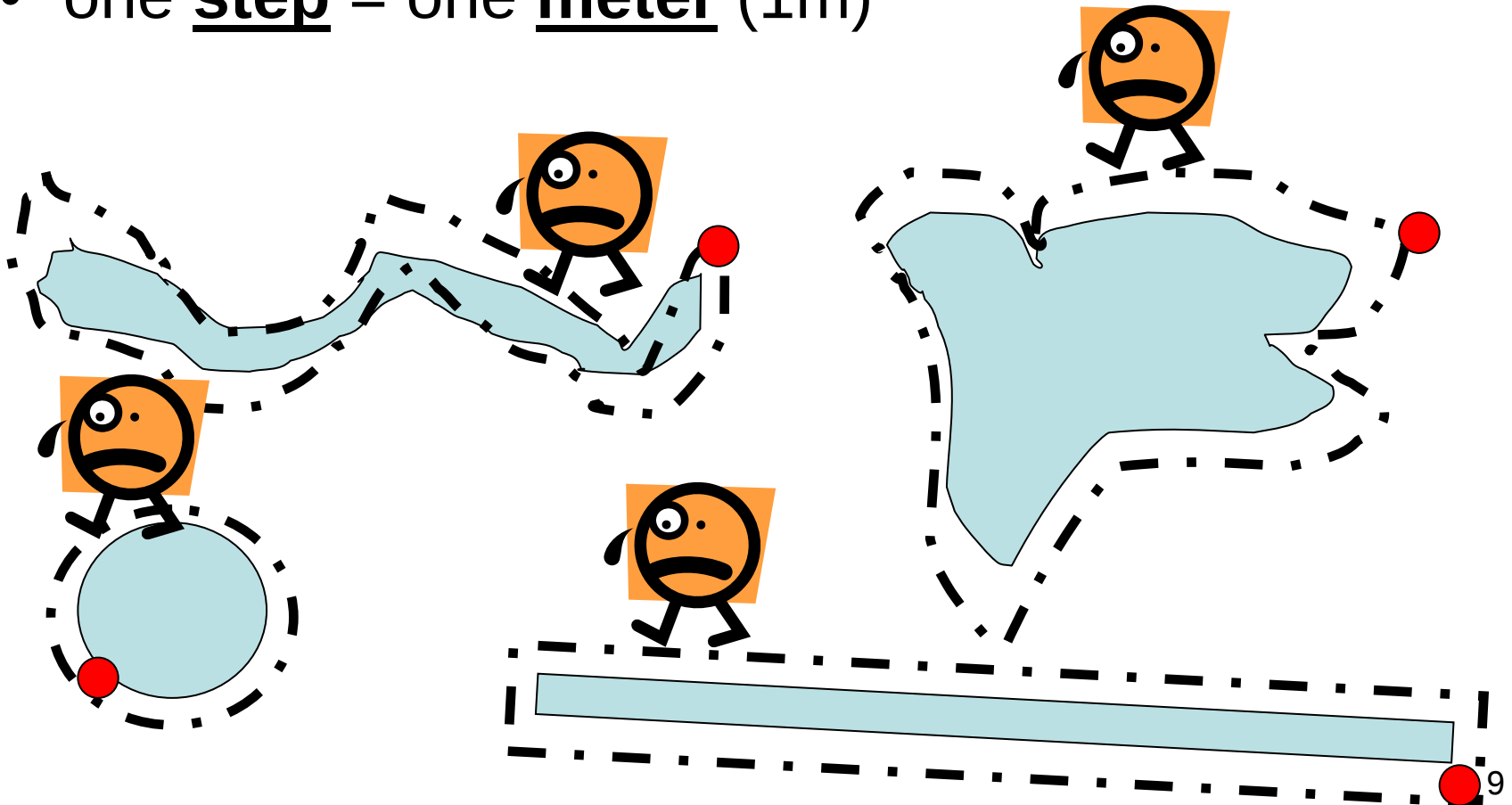
- | | | |
|------------------------|---|----------------------------|
| 1: Puddles&tire tracks | 5: Construction pits/foundations/man-made holes | 9: Other agriculture |
| 2: Swampy areas | 6: Water storage container | 10: Stream/river bed |
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| 4: Drain/Ditch | 8: Matuta | 12: Other (describe below) |

Full habitat description even if dry

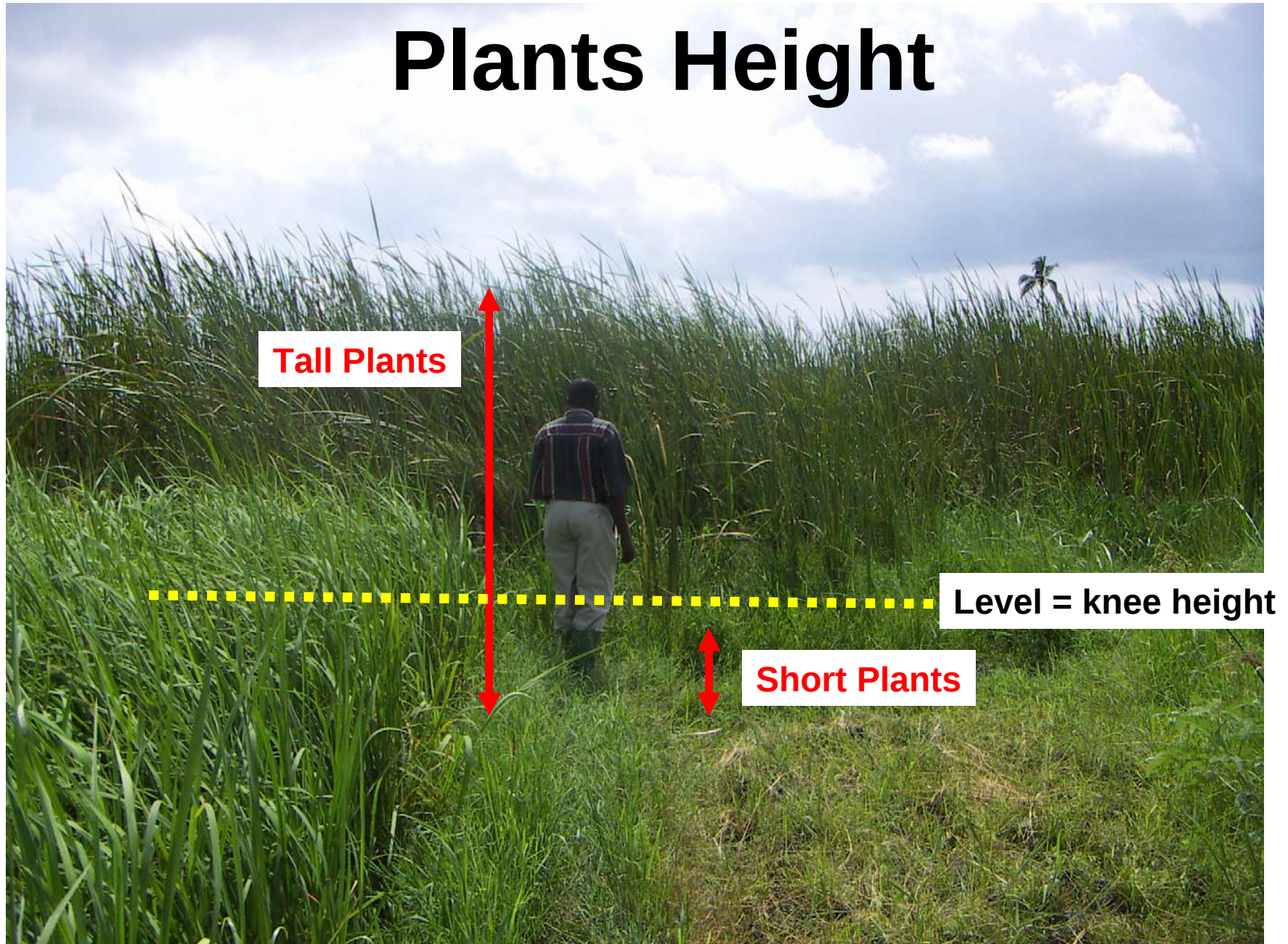
Plot ID	Habitat ID	Habitat type	Same habitat type fr last visit? 1=Yes 2: 3=First visit	Previous habitat type	Habitat description	House number	Wet?		Habitat perimeter			Plants			Water depth		Larval stage			Pupae		Comments
							dry	Contains water	< 10 m	10-100 m	> 100 m	None	Short vegetation	Tall vegetation	Floating plants	< 0.5 m	> 0.5 m	Anoph.	Culex	Absent	Present	
3	1	4	2	4	water tap turned off this week	22	X															inbetween the houses

Habitat perimeter (m)

- walk around and count your steps
- one step = one meter (1m)



Plants Height



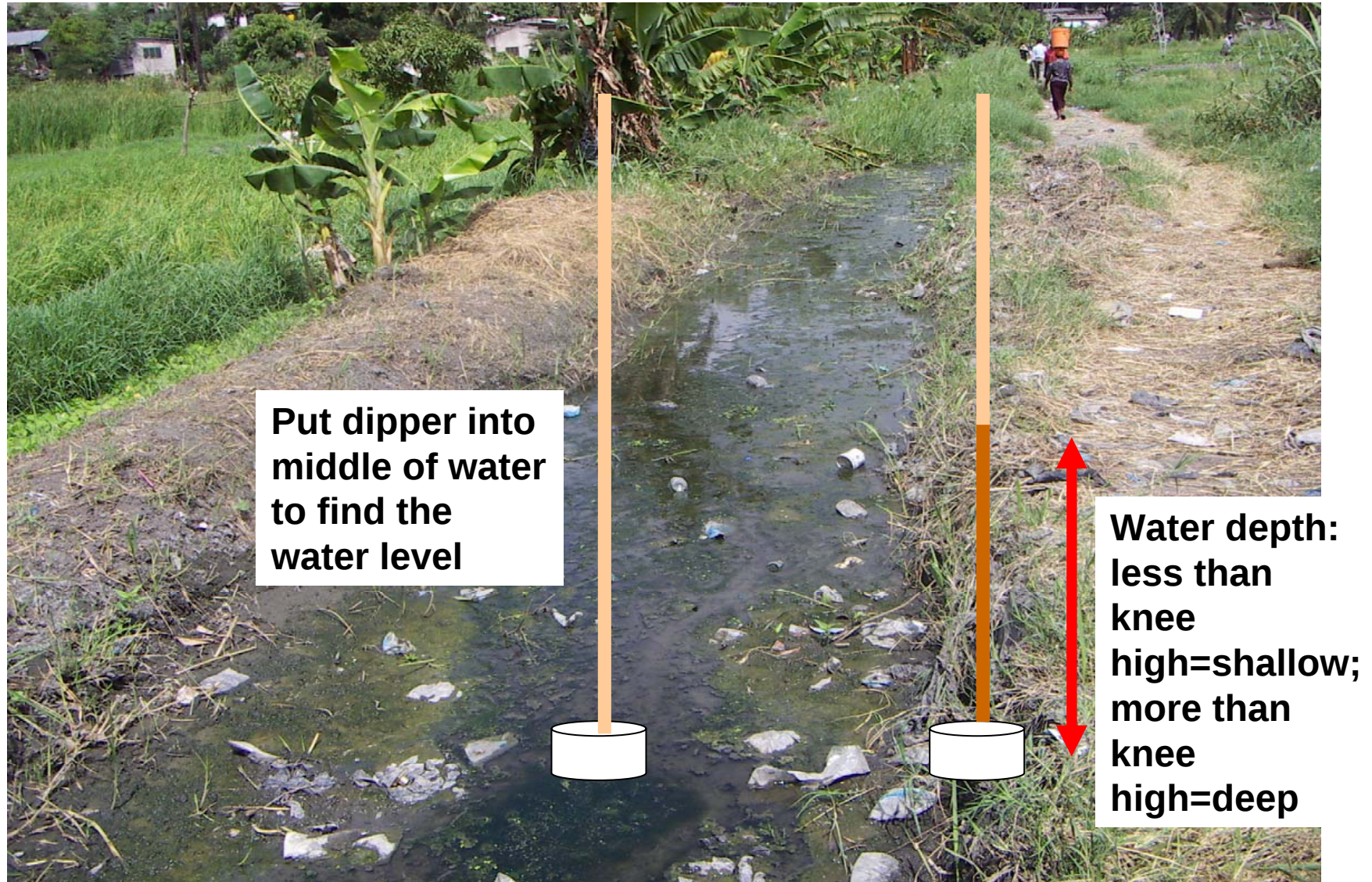
Floating Plants



Floating Plants

Floating Plants

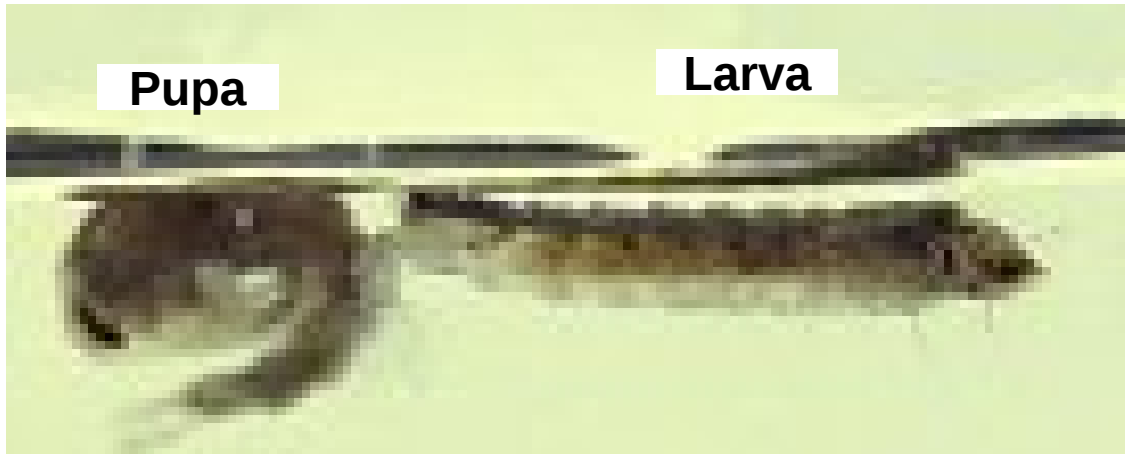
Water depth



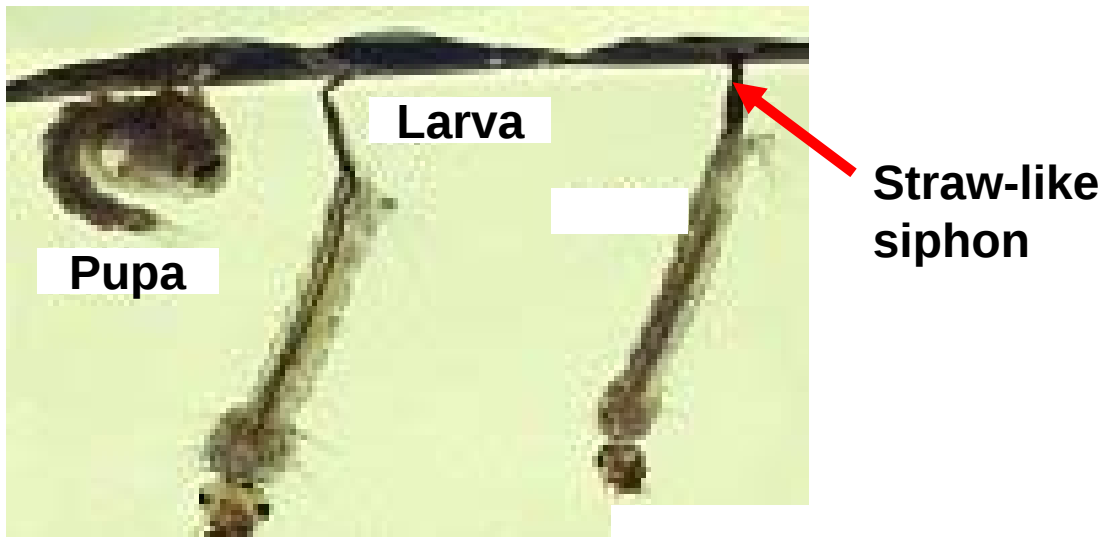
Mosquito types

- Mosquitoes breed in all types of water, it is important to check all water bodies during a larval survey.
- Anopheles larvae and Culex larvae physically distinguishable but the pupae are not physically distinguishable

Mosquito types



Anopheles larva
has no obvious
siphon and lies
parallel to the
water surface



Culex larva
hang down from
the water surface
at an angle

Signature and date from inspectors

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GPS(UTM/WGS84): Northing _____ Easting _____

Habitat codes:

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10-cell leader: _____

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- 10: Stream/river bed
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Plot ID	Habitat ID	Habitat type	Same habitat type from last visit? 1=Yes 2=No 3=First visit	Previous habitat type	Habitat description	House number	Wet?		Habitat perimeter	Plants		Water depth		Larval stage			Pupae		Comments			
							dry	Contains water		None	Tall vegetation	Floating plants	< 0.5 m	> 0.5 m	Absent	Early	Late	Absent		Early	Late	Absent
									< 10 m													

CORPS signature Date

Inspectors signature Date

Habitat type = 12 codes

- 1: Puddles and Tyre Tracks
- 2: Swampy Areas
- 3: Mangrove swamp
- 4: Drains and Ditch
- 5: Construction pits, foundations and man-made holes
- 6: Water storage or other Man-made containers:
- 7: Rice paddy (Rice field)
- 8: Matuta
- 9: Other Agriculture
- 10: Stream and River beds
- 11: Ponds
- 12: Others (please describe them)

Is the site natural or man-made?

Natural

2: Swampy Areas
3: Mangrove swamp
10: Stream and River beds
11: Ponds

Man-made

1: Puddles and Tyre Tracks
4: Drains and Ditches
5: Construction pits, foundations, man-made holes
6: Water storage or other man-made containers
7: Rice paddy (Rice field)
8: Matuta
9: Other Agriculture

Is it freshwater or salt water?

Freshwater

2: Swampy Areas
10: Stream and River
11: Ponds

Saltwater

3: Mangrove swamp

Is the water stagnant or flowing or should it be flowing?

Stagnant

2: Swampy Areas
11: Ponds

Flowing

10: Stream and River

Next slide

Drain is straight and man-made and
river meanders and is natural

Man-made

- 1: Puddles and Tyre Tracks
- 4: Drains and Ditches
- 5: Construction pits, foundations and man-made holes
- 6: Water storage or other man-made containers
- 7: Rice paddy (Rice field)
- 8: Matuta
- 9: Other Agriculture

Is it agriculture?

Yes

- 7: Rice paddy (Rice field)
- 8: Matuta
- 9: Other Agriculture where water collects

What type of agriculture?

No

- 1: Puddles and Tyre Tracks
- 4: Drains and Ditches
- 5: Construction pits, foundations, holes
- 6: Water storage, man-made containers

Is the water stagnant or flowing?

Stagnant

- 1: Puddles and Tyre Tracks
- 5: Construction pits, foundations, man-made holes
- 6: Water storage or other man-made containers

Flowing

- 4: Drains and Ditches

Can this water body be moved or lifted?

Yes

- 6: Water storage or other man-made containers

No

- 1: Puddles and Tyre Tracks
- 5: Construction pits, foundations, man-made holes incl. garden wells

1: Puddles and Tyre Tracks



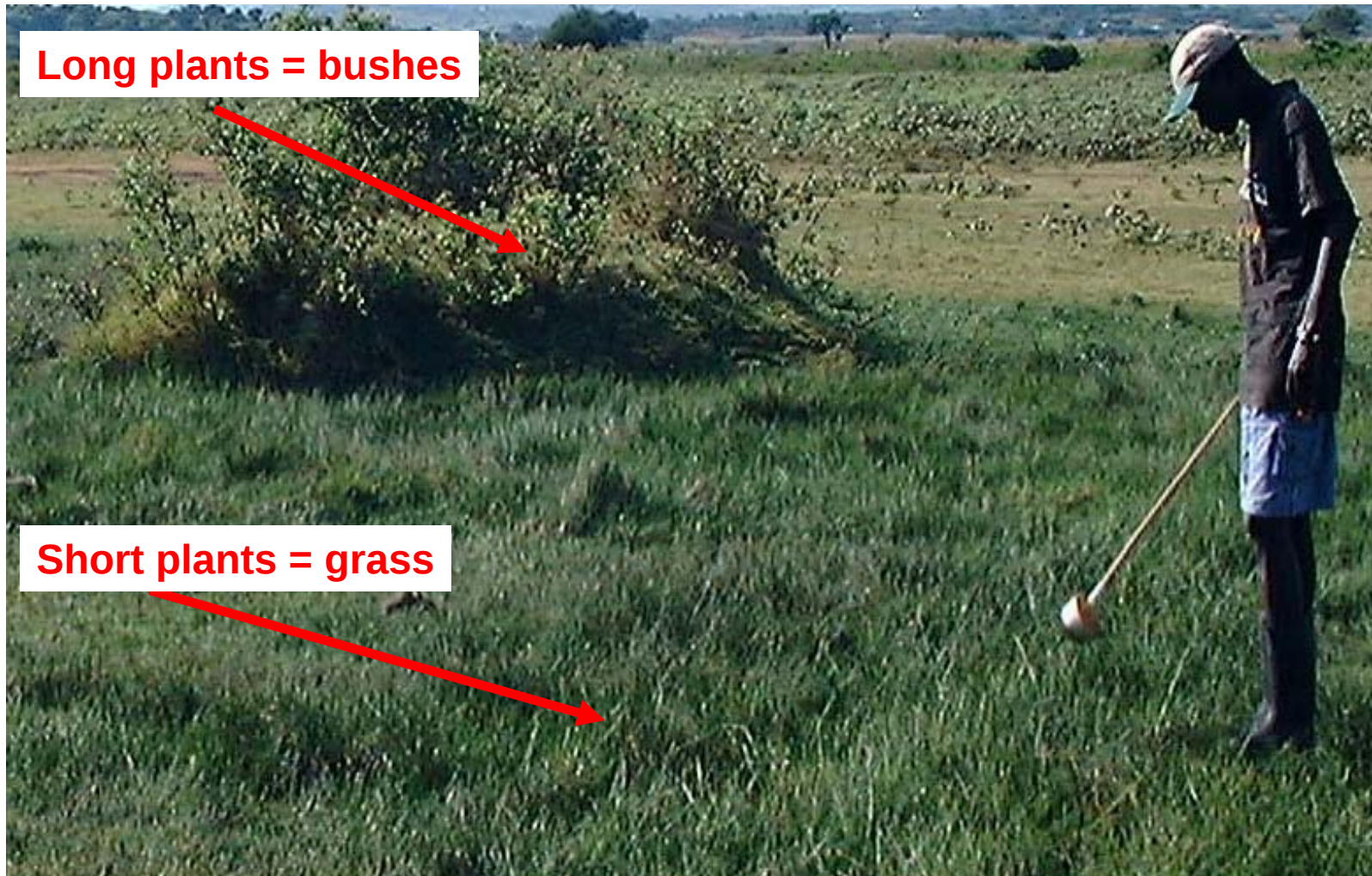
1: Puddles and Tyre Tracks



2: Swampy Areas

- very high ground water table
- water present always or most of the year
- water source = ground water & rainwater
- often border a large water body e.g. river
- usually depth >0.5 m
- often tall reeds, short grass or / & floating plants

2: Swampy Areas



2: Swampy Areas



3: Mangrove swamp

- usually near the sea = salty water from the sea
- mangrove trees growing with water underneath
- mangrove trees roots exposed
- water is tidal, when tide out:
 - small pools
 - crab holes in mud
 - shells on mangrove tree barks

3: Mangrove swamp



Tree roots in water

Sea water

3: Mangrove swamp



Crab holes



Sea shells on the mangrove tree

4: Drains and Ditches

- man-made
- Usually getting rid of water **or** to irrigate
- flowing water
or if blocked with litter = stagnant water
- can be cement lined **or** just be dug in the ground

4: Drains and Ditches



Tall plants

Short plants

4: Drains and Ditches

Dry Habitat



5: Construction pits, foundations and man-made holes

- small to medium sized
- man-made habitats
- stagnant water
- water source = rain or ground water (garden wells), or filled by people
- function to collect water
- habitats in the ground - **not** moveable

5: Construction pits, foundations and man-made holes



5: Construction pits, foundations and man-made holes



Sharp
man-made
edges

5: Construction pits, foundations and man-made holes



6: Water storage or other Man-made containers:

- any container that holds water that could serve mosquitoes to breed (which were left for more than a week)
- open water storage tanks, barrels, tyres, livestock feeding trays
- Do not record all small buckets, flower pots, watering cans etc, since the water will be used and their position changed

6: Water storage or other Man-made containers:



Rain water = potential breeding site

7: Rice paddy (Rice field)

- plots where rice grows
- drying up = small pools = concentrated mosquito larvae

7: Rice paddy (Rice field)



7: Rice paddy (Rice field)



8: Matuta

- raised ridges on agricultural plots
- man-made furrows = hold water for longer duration
- larvae in very small depressions

8: Matuta



8: Matuta



9: Other Agriculture

- stagnant water bodies
- water source = irrigation or rainfall or high water table

9: Other Agriculture



10: Stream and River beds

- Fast or slow flowing water, although it can be seasonal
- Natural, not man-made
- twisting course not straight as for ditches and drains
- mosquito larvae habitats usually at
 - edges very slow flow or stagnant
 - seasonal rivers and creeks dry up at certain times in year and leave stagnant pooling water

10: Stream and River beds



Flow = water current

10: Stream and River beds

10: River

2: Swampy
Areas



11: Ponds

- medium to large size stagnant water
- water present for several months in the year
- rainy season (depth can be >0.5 m, in the middle of habitat)

11: Ponds



12: Others

- any other stagnant water bodies that could be mosquito larval habitats
- please make sure you have **checked** the definitions of habitat categories 1 to 11
- please **describe** the habitat recorded under category 12