



**Long- and short-range jackal
(*Canis aureus* L.) vocalizations**

**A new approach based on stationary
observations of a non-captive family
group**

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Camp location

(1) camp and bait-site; (2) den; (3) cowherd grazing range; (4) southern wooded cover; (5) plateau with cornfields; (6) industrial vineyard; (7) Village of Stanevo



The camp and bait-site at low water. (1) bait-site; (2) main tent; (3) den



Duration and data

25 Apr. – 19 Sept. 2021

133 recorded nights

554 jackal visits

92 vocalizations registered:

51 long-range ones (Type (a), ‘howling’)

41 short-range (Type (b), ‘shouting’,
‘cackling’, etc.)

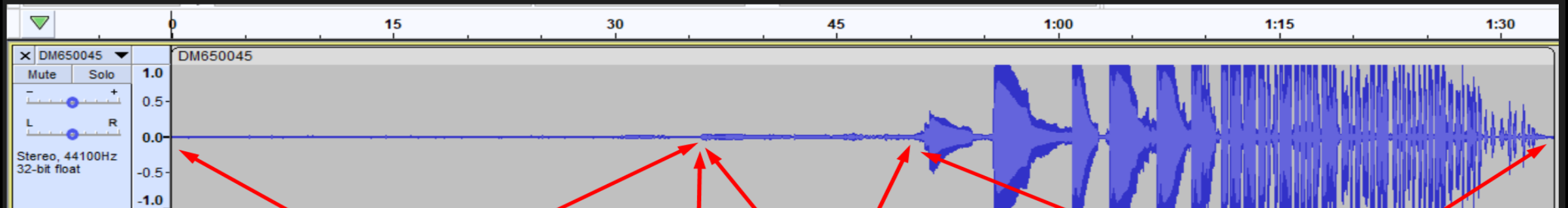
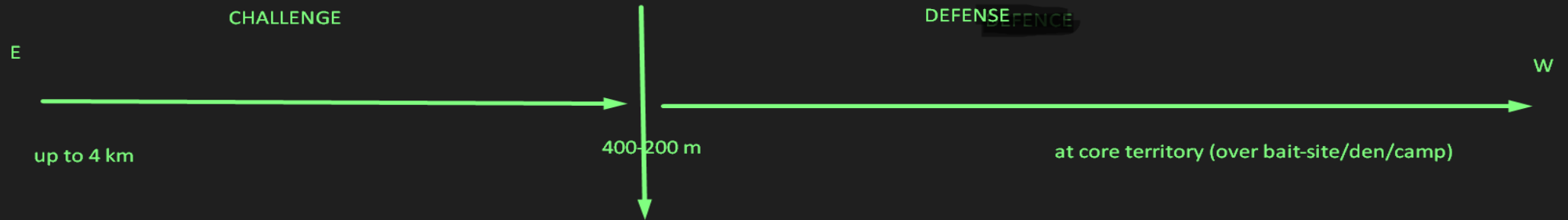
'HOSTS': RESIDENT FAMILY GROUP

1. 'Big Man': alpha-male 3-4 yr., defender
2. 'Whiskers': alpha-female 3 yr., mother
3. 'White Back': sub-dominant male, 'uncle', 3-4 yr.
4. 'Black Tail': sub-dominant, m or f, < 1 yr.
5. 'Skinny': sub-dominant, m or f, < 1 yr., active 'helper'
6. 'Boldy': sub-dominant, m or f, < 1 yr. , 'helper'
7. Pup born late May
8. Pup born late May

Method

1. Passive monitoring of vocal activity;
2. Focus on core-territory: bait-site and den close to researcher's camp;
3. A variant of commensalism (olfactory contact of shared food);
4. Full-time longitudinal investment ('participant observation')

A CHALLENGE – DEFENSE ('C-D') INTERPRETATIVE MODEL



CHALLENGE WAILING DEVELOPING
INTO GROUP-HOWLING

ALPHA-MALE
OF HOST GROUP

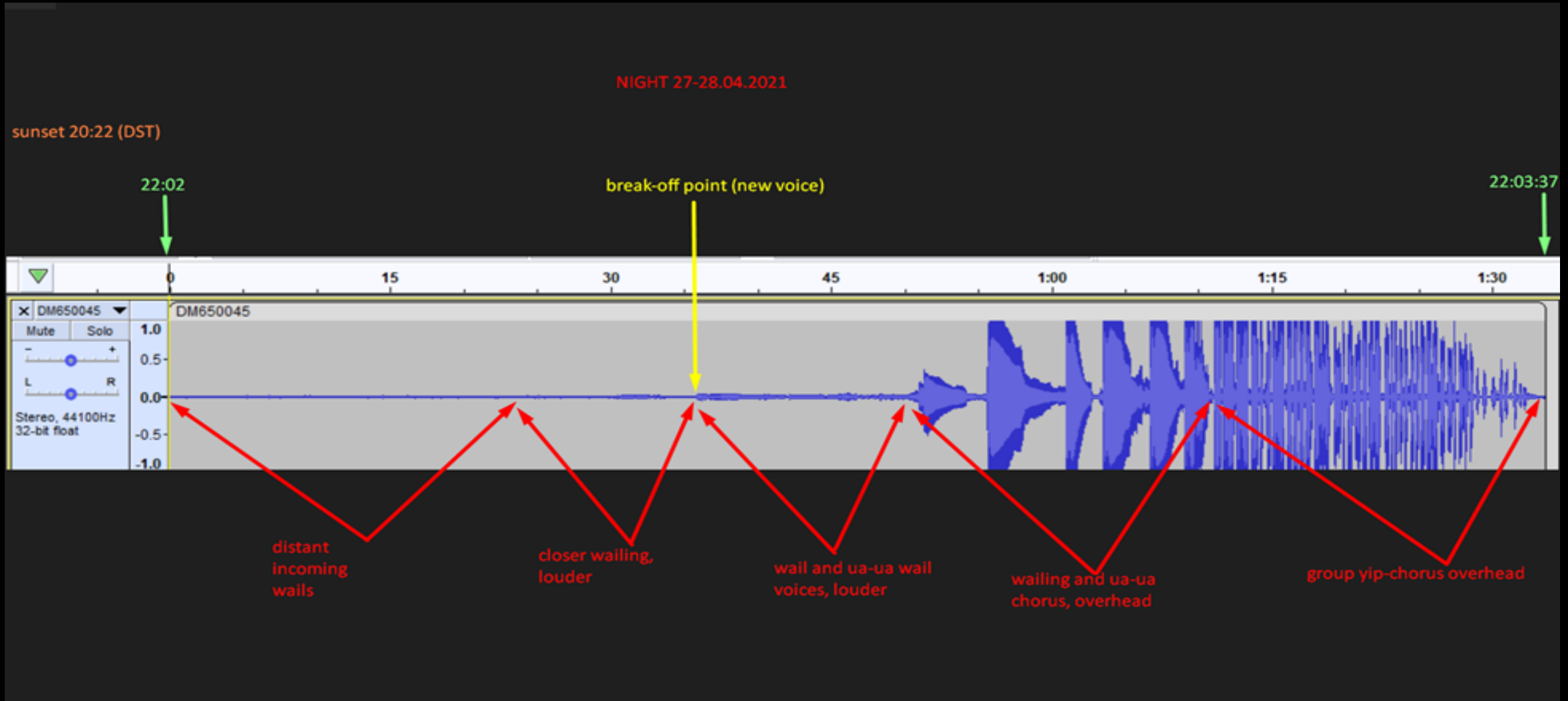
INITIAL 2-3
WAILS

THE OTHER ADULTS
JOINING IN - GROUP
HOWLING

FULL MOBOLIZATION OF THE WHOLE
GROUP - YIP-HOWLING

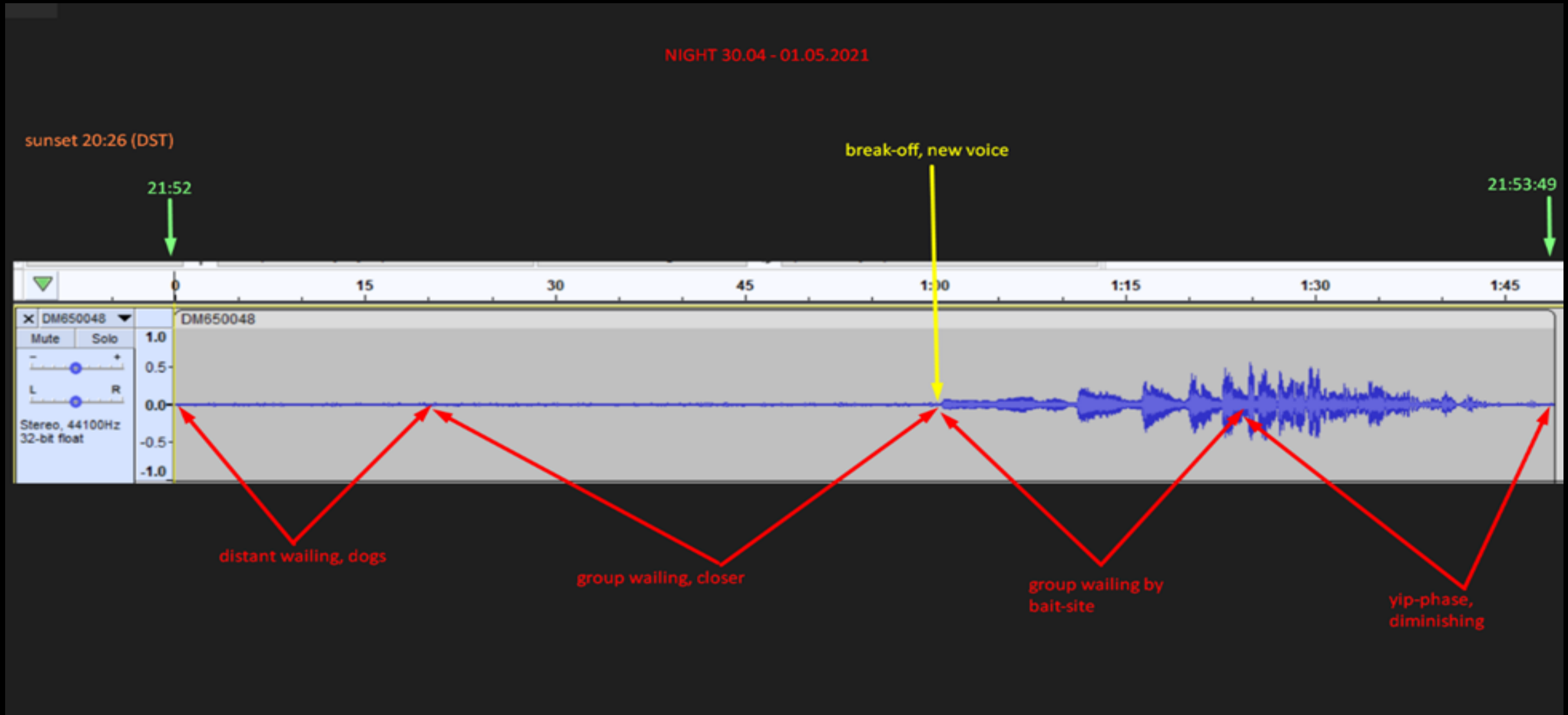
Type (a) – long range inter-group vocalizations - 1

Sonogram after Audacity sound-track segment 045-1(1:37 min) 27.04;
22:02 (DST)



Type (a) – long range inter-group vocalizations - 2

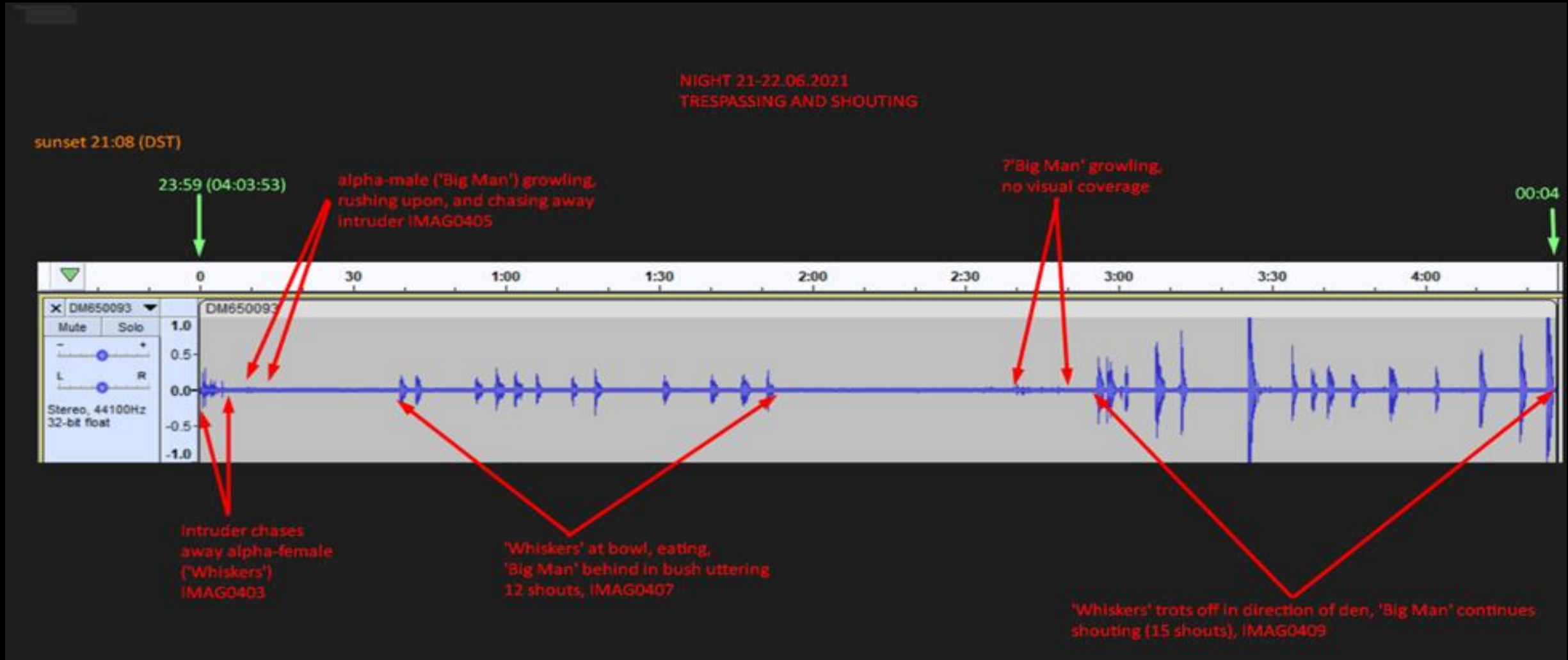
Sonogram after Audacity 048-1(1:49min) 30.04; 21:52 (DST)



Type (b) Short-range vocalizations at bait-site
HOSTS vs TRESPASSERS bloodless
chasing, shouting, cackling



Type (b) Short-range inter-group vocalizations - 1 SHOUTING



1. Alpha-female ('Whiskers') at bait-site; 2. Young trespasser rushes upon her, she flees; 3. Trespasser snatches a bite and dashes towards river-bank; 4. Crashing & brief growling heard from river-bank



1. 'Wh' back at bait-site, looking twds river-bank; looking around; alert;
2. Growling from river-bank, she growls back;
3. Poised to run towards river-bank



1. 'Wh' back on food;
2. First strong shout from alpha-male ('Big Man');
3. More shouts from 'BM';
4. 'Wh' eating, emits short growls without raising head



1. 'Wh' goes on eating; continued shouting by 'BM'; 2. 'Wh' stops eating, trots up entry/exit path – in the direction from which the shouting is heard, also path to den; 3. 'BM' continues shouting (27 shouts in all)

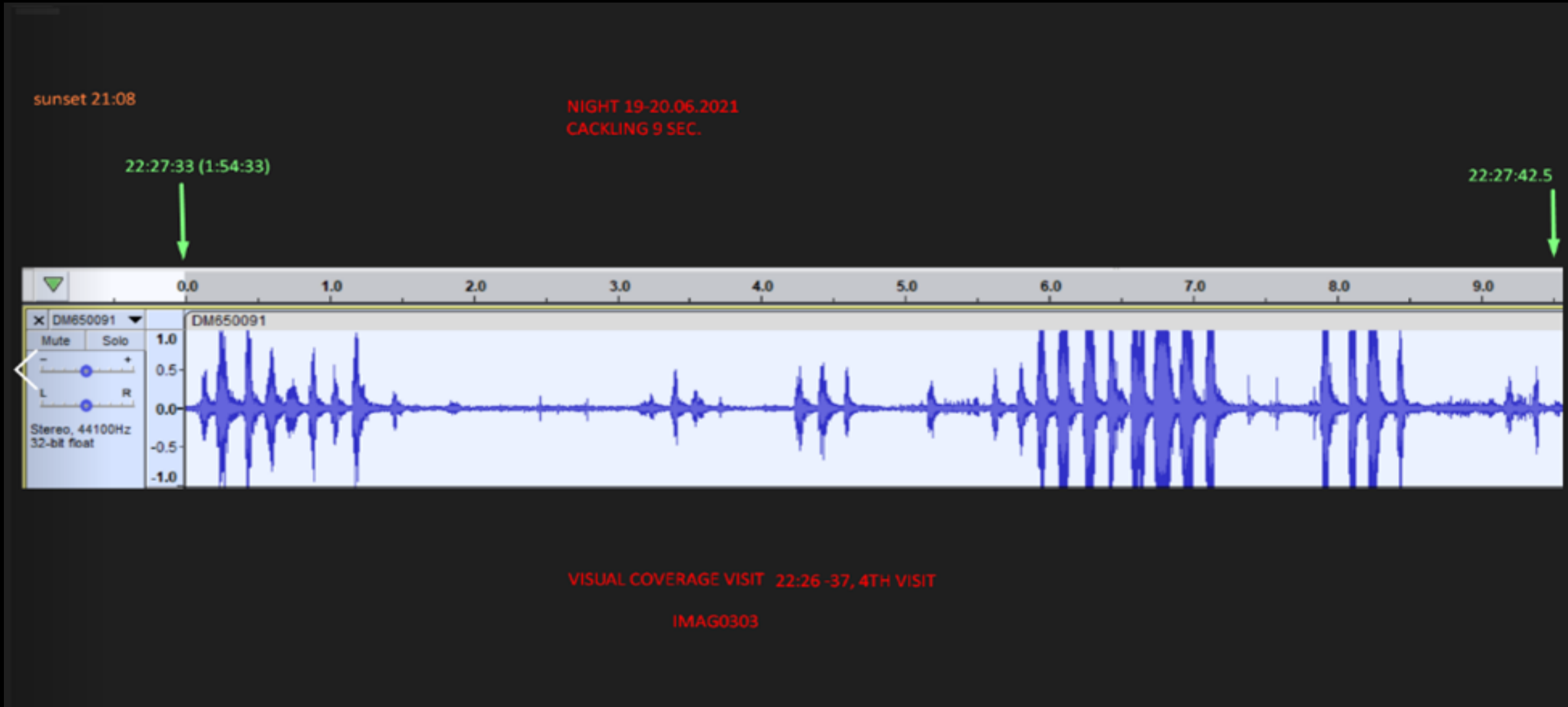


Illustration: a shouting bout: trespassers shouting at hosts (Wh & sub)



Type (b) Short-range inter-group vocalizations – 2

Cackling - sonogram after Audacity 091-1 19.06; 22:27 (9.5 sec.)



1. Trespasser clicking and cackling at unseen hosts by river-bank, they growl back; 2. Trespasser edges up to bait-site fringe, takes a bite; 3. Two hosts rush upon him by entry/exit path, scuffle and cackling ensue



A growling bout: hosts vs trespassers, Big Man ends it all



Comparison with heterospecifics: greater physical contact, but again more like quarrelling than blood-letting fighting; peaceful resolution





Conclusions

- Our findings suggest that howling's principal functional meaning stresses *group cohesion* and not *conflict-evasion* ('roll-call function of howling);
- Engaging with the defense of an entire foraging territory is likely void of functional logic for foragers, since what is of premium value is to ensure 'host' controlling status – through group cohesion - over stable, high-return resources;
- For ensuring expansive success for the species as a whole, conflicts are not so much avoided as being kept below a blood-letting threshold ('quarrels – yes, blood-letting fights – no');
- The mechanisms ensuring this selective provision remain unclear