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# Pre-cruise NEP complex ID refresher.

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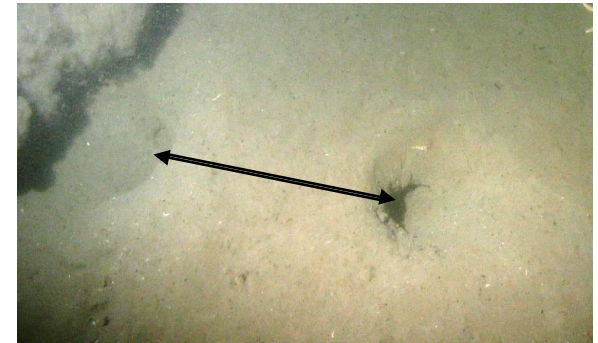
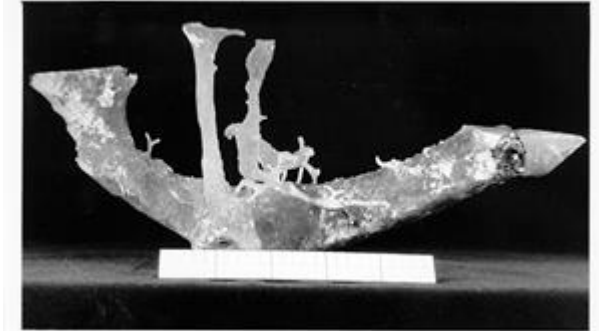
**marinescotland**

# What are we counting?

- Counting ‘complexes’ not ‘burrow entrances’
- One *Nephrops* per complex
- Differences between areas – sediment, density and disturbance
- Essential characteristics – may vary, camera angle
- Focus on identifying *Nephrops* – other burrows distracting

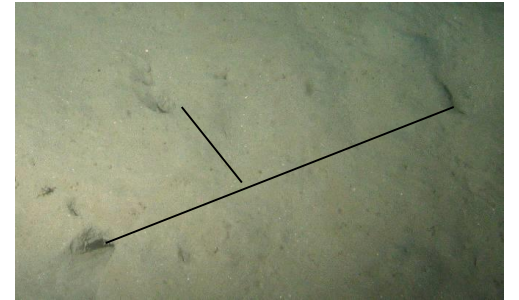
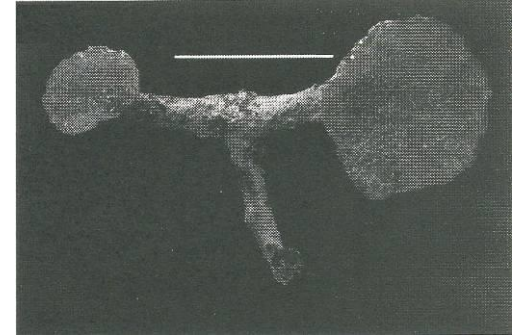
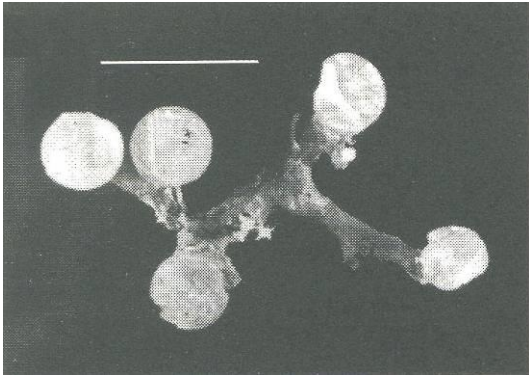
# Basic complex structure

- Single entrance/multiple entrances
- Post larvae single, steep entrance
- Entrance angle – age, sediment, density
- Entrance, crescent
- Classic U-shape, linear complex, apex
- Juvenile
- Shadow – provides clarity/confirmation
- Orientation to camera



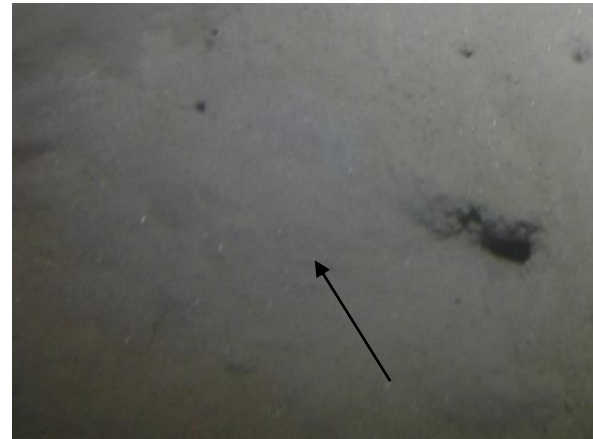
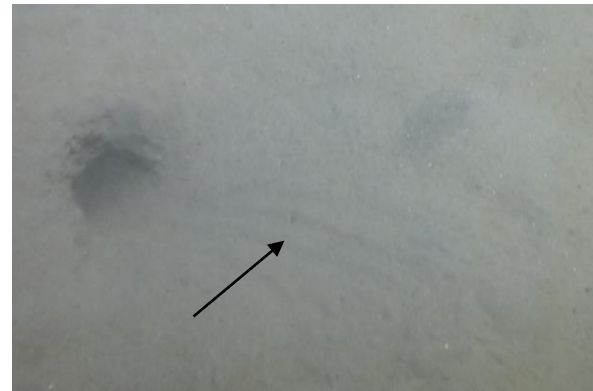
# More developed complexes

- Expansion, T-shaped complex
- Approx. central convergence, apex
- Further entrances
- Erosion of entrances over time
- Entrances out of view



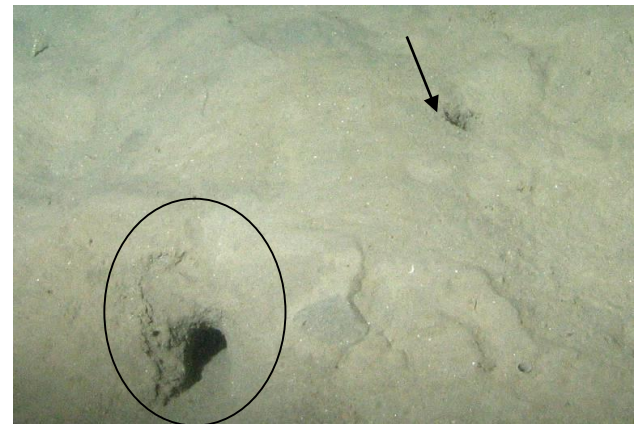
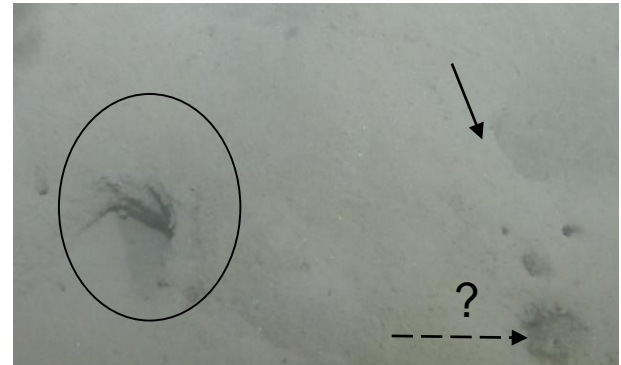
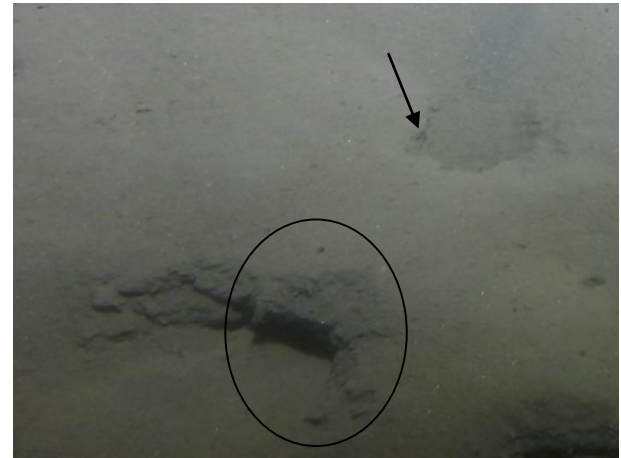
# Scrapings

- Delta / driveway
- Excavated material



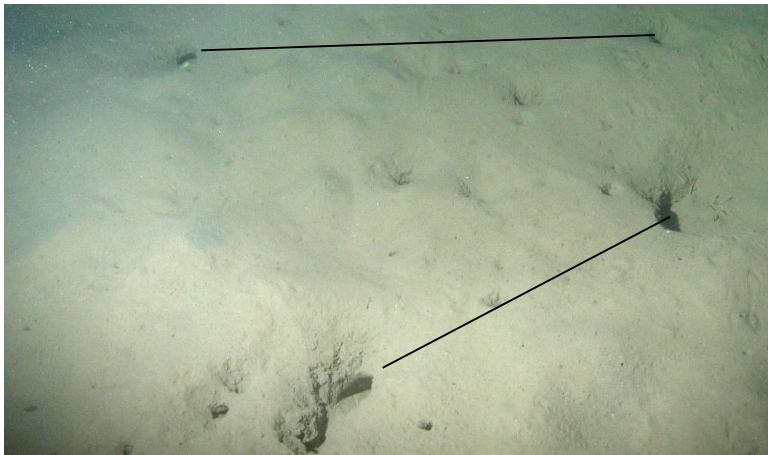
# Signature burrow

- Eye catching/ most prominent
- Scan
- Convergence



# Neighbours

- Separate complexes even if in close proximity
- Apexes are not orientated around a central point
- Parallel entrances / resin cast evidence



# Collapsed burrows

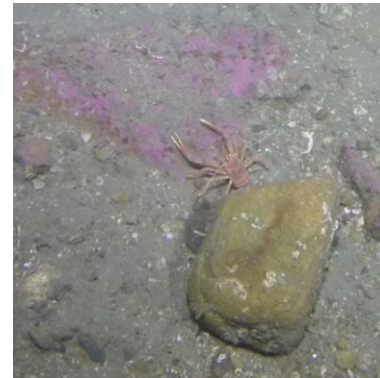
- Indication not being maintained – assume no longer inhabited by *Nephrops*
- Do not count
- Lighting/video angle advantageous





# Other burrowing species

- Angle of burrow entrance
- Crabs, fish, molluscs, shrimps
- *Callianassa subterranea*
- *Calocaris macandreae*
- *Goneplax rhomboides*
- Various gobies
- *Cepola rubescens* (red band fish)
- *Lumpenus lampretaeformis* (snake blenny)
- *Munida rugosa* (squat lobster) – rocks!

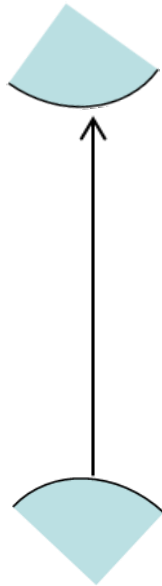


# Complex combinations

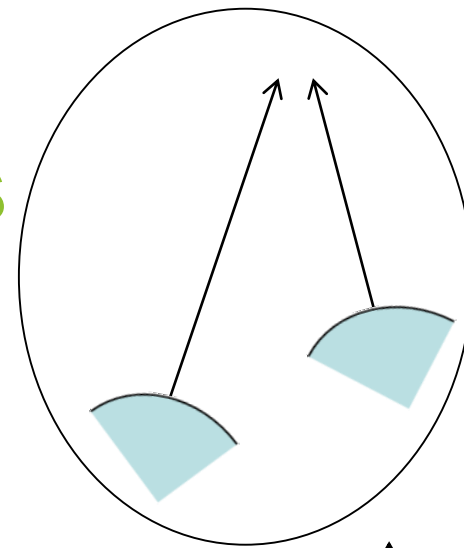
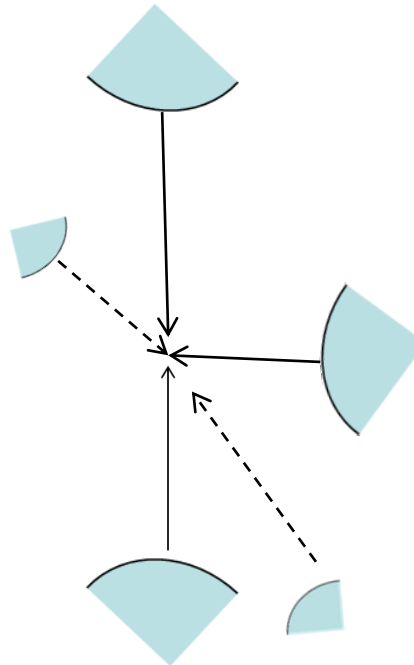
New complex



Established U-shaped complex

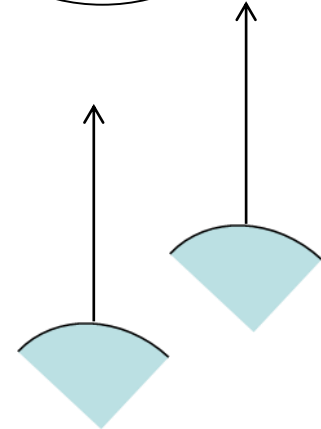


T-shaped complex and beyond

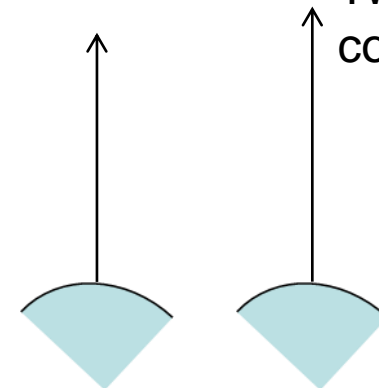


Two entrances that converge

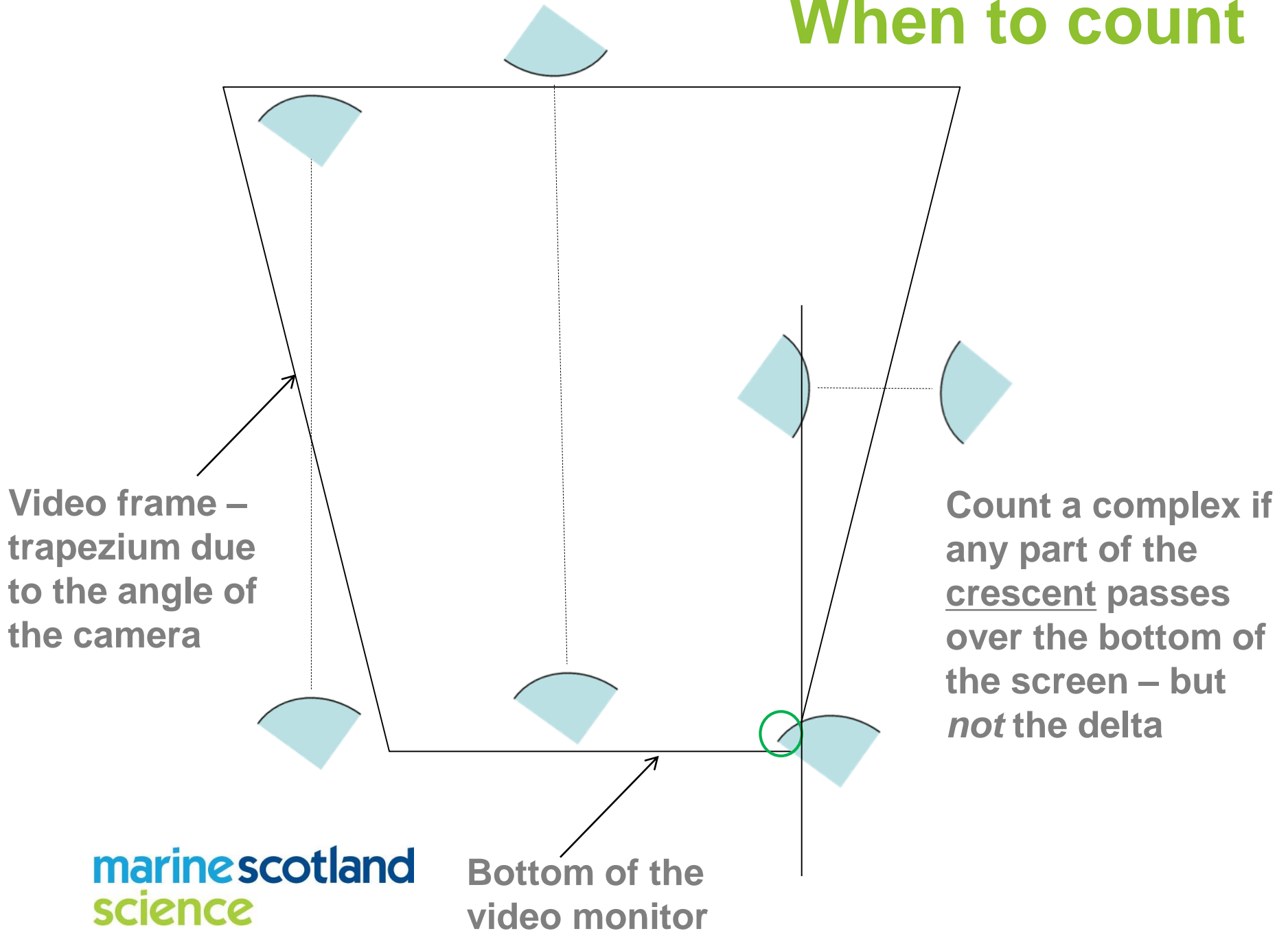
Two parallel complexes



Two parallel complexes



# When to count



# When to count

- Fixed or variable FoV – rise and falls, variable ribbon effect
- Bottom of the screen
- Entrance but not delta
- Trapezium – off side of screen
- Count all complexes observed
- Size of entrance irrespective – if you are confident, count it
- Entrances maybe far apart but same complex
- Flight reflex – misleading
- *'Nephrops out'* does not always mean there is a burrow in view
- Count only when you are sure...  
'if in doubt, leave it out'
- Other non-burrow guidance - protocols
- Counts are statistically assessed, third counts, peer reviewed process