

# Let the good times Flow(Cam): Automating lake zooplankton monitoring

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# Zooplankton collection

- Collect zooplankton samples fortnightly
- 3 lakes in English Lakes District
- That's up to 104 samples per year to process (!!)





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## Microscopy

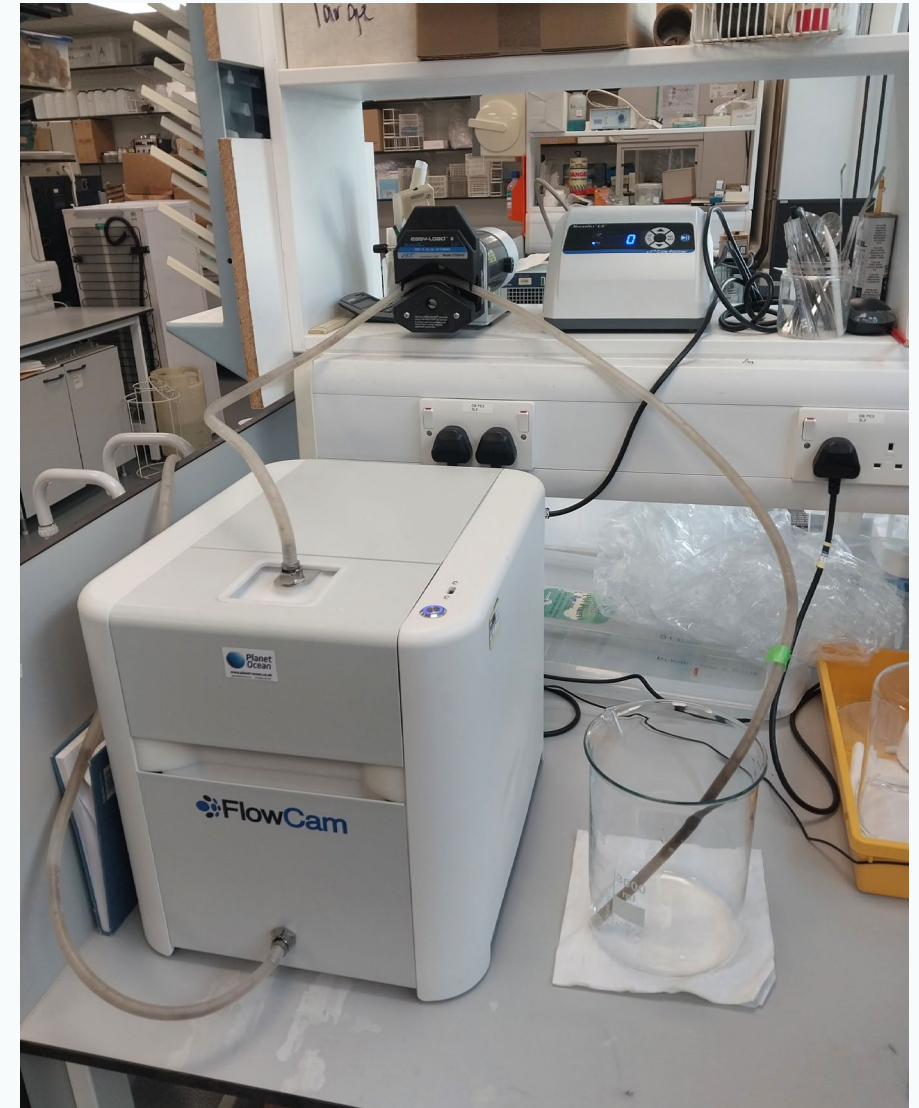
- Manual counts and sorting of samples
- Time consuming
- Costly
- Can identify to species level



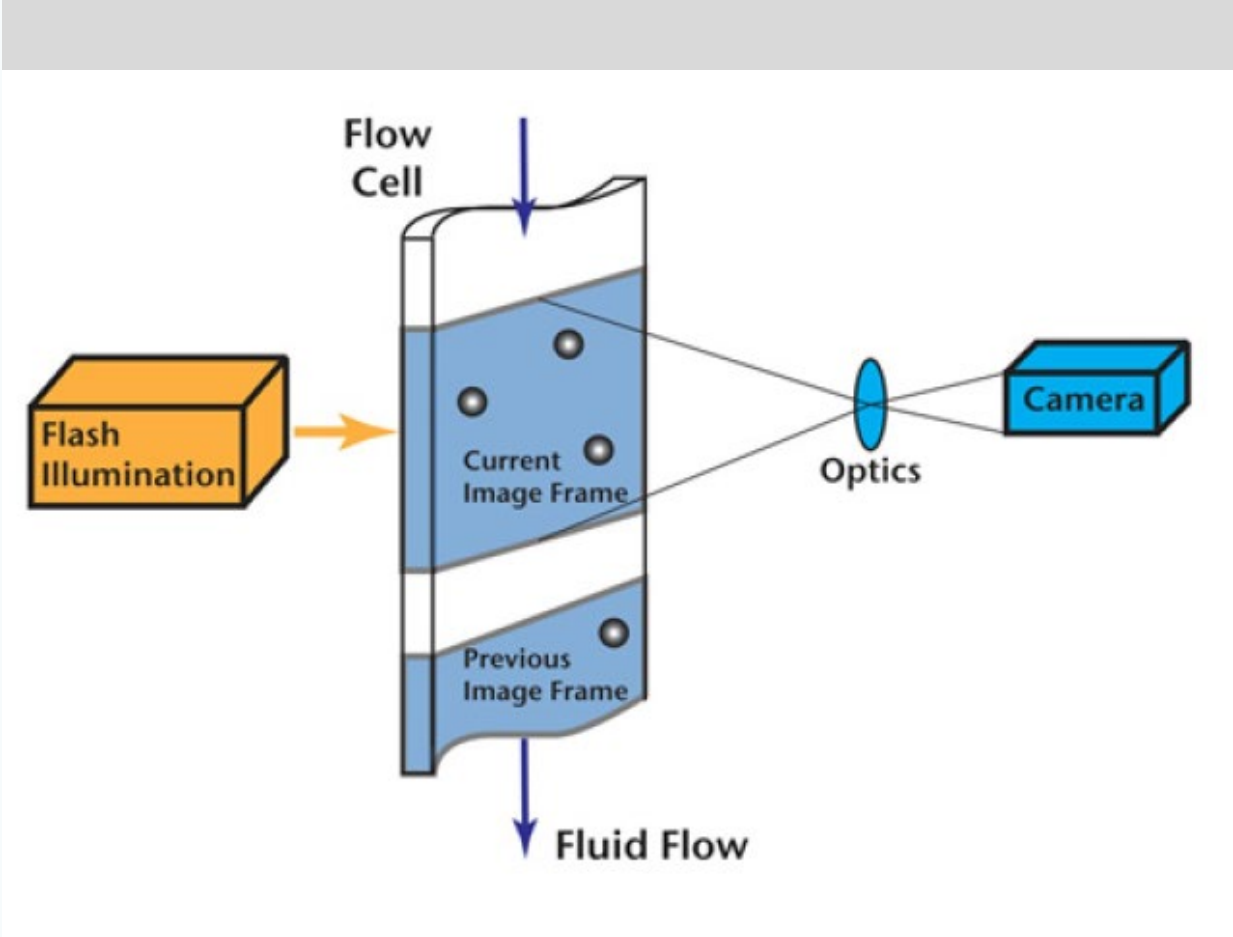


# FlowCam Macro

- Examine moving fluid under a lens
- Captures images of particles within that fluid
- Adjustable settings (e.g. flow rate, base size filter, rolling calibration)
- Digital images to refer back to and put into presentations!



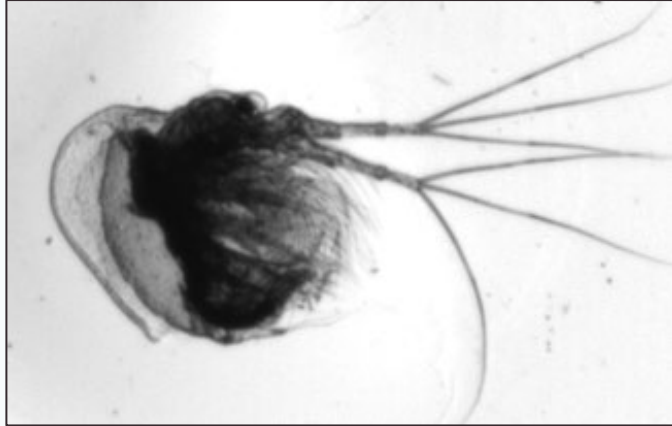
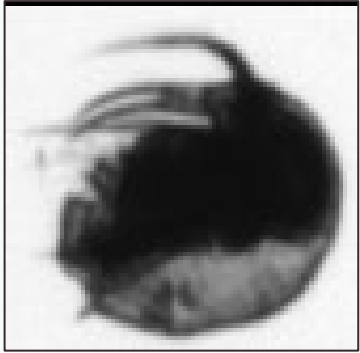
# FlowCam Macro – flow cell



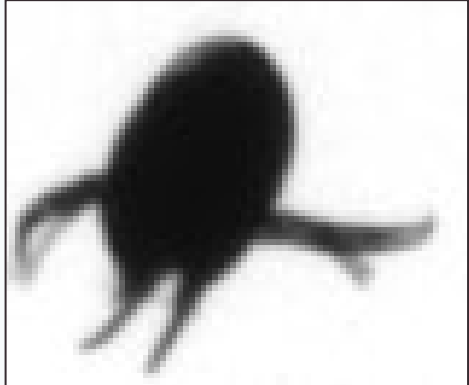
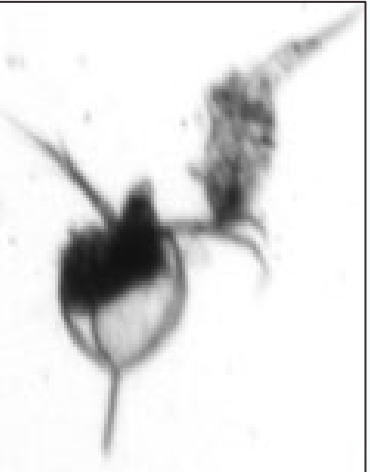
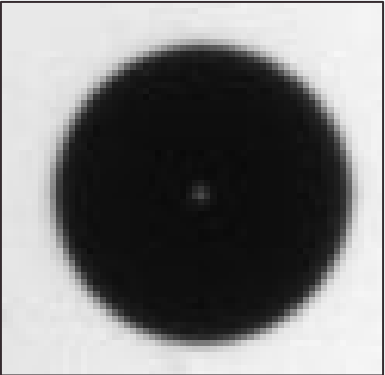
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# We get images like these...

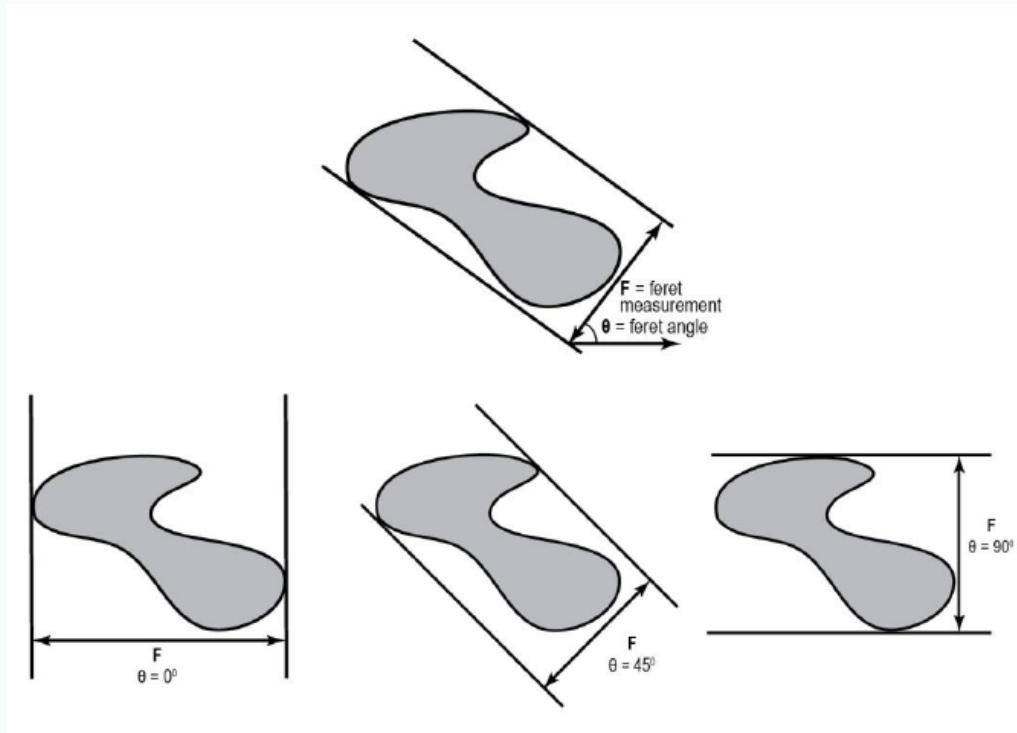


# But we also get images like these...





# FlowCam - metrics

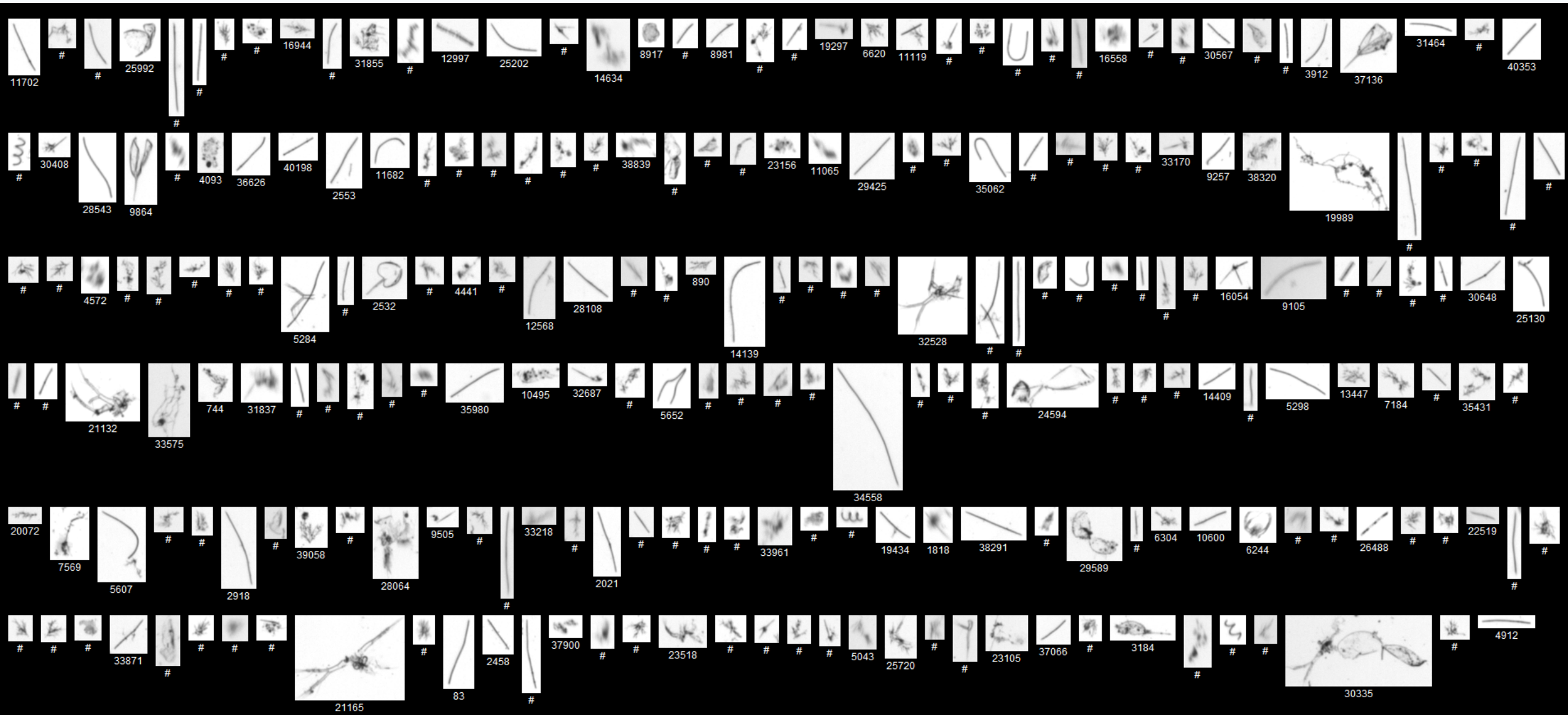


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- Software generates at least 30 different direct image-based measurements
- Allows you to characterize each particle
- Often use length, width, Diameter (ESD), Volume (ESD) based on feret measurements







# Flowing forward



- Image de-collaging
- Creating larger libraries of images using an app to classify images
- Use of AI to automate categorisation of images
- Save time, effort and money!



**Thank You**

