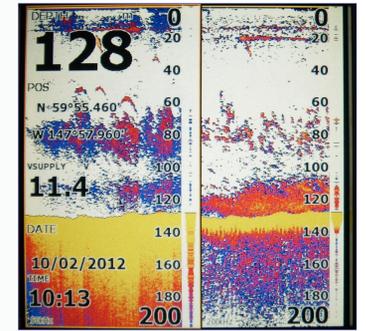


## Are low cost video cameras a practical method for identifying subsurface prey?

**Objective:**  
Develop a system that could quickly identify subsurface prey during ship-based marine mammal and seabird surveys.

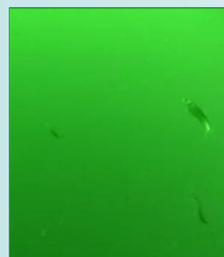


What are they eating?

What Species?

### Advantages:

- Non-invasive.
- Rapid deployment and retrieval minutes.
- Low cost - <\$500
- Observe natural behavior.
- Minimal disruption of ship-board activities.



Herring feeding at 75 feet. Natural light, August, SEAK.

Gadgid and brittle stars in PWS under artificial light.



Diseased YOY herring in PWS under artificial light.

Anemone in PWS under artificial light during December



We deployed cameras (GoPro Hero 2™) from fishing reels when foraging whales and birds were encountered during line-transect surveys.

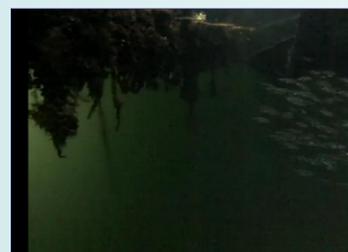
### Limitations:

- Light.
- Turbidity snow effect.
- Poor image quality.
- Depth - 197 feet.
- Tow speed - 1 knot.
- Alters behavior with artificial light.
- Not real-time.
- Large files~2GB for 20min.



Boat hull in mid-PWS during October under partly cloudy skies. Visibility is limited.

Stickleback school at surface. Overcast day, late afternoon, August.



Under artificial lights some zooplankton species were attracted to artificial lights.

YOY herring in PWS seemed to avoid the camera at night. Their rapid movement created blurred images at low light levels.



### Conclusions:

Mixed results – light and visibility were the greatest challenge.

The ability to rapidly deploy and retrieve the camera did not disrupt surveys.

Great for benthic observations.



In about 1/2 our attempts catching prey worked better, but it took a lot more time.



### Other Applications

- Monitoring trawl performance.
- Documenting rockfish barotrauma.
- Outreach.
- Many more.



From Joe Orsi