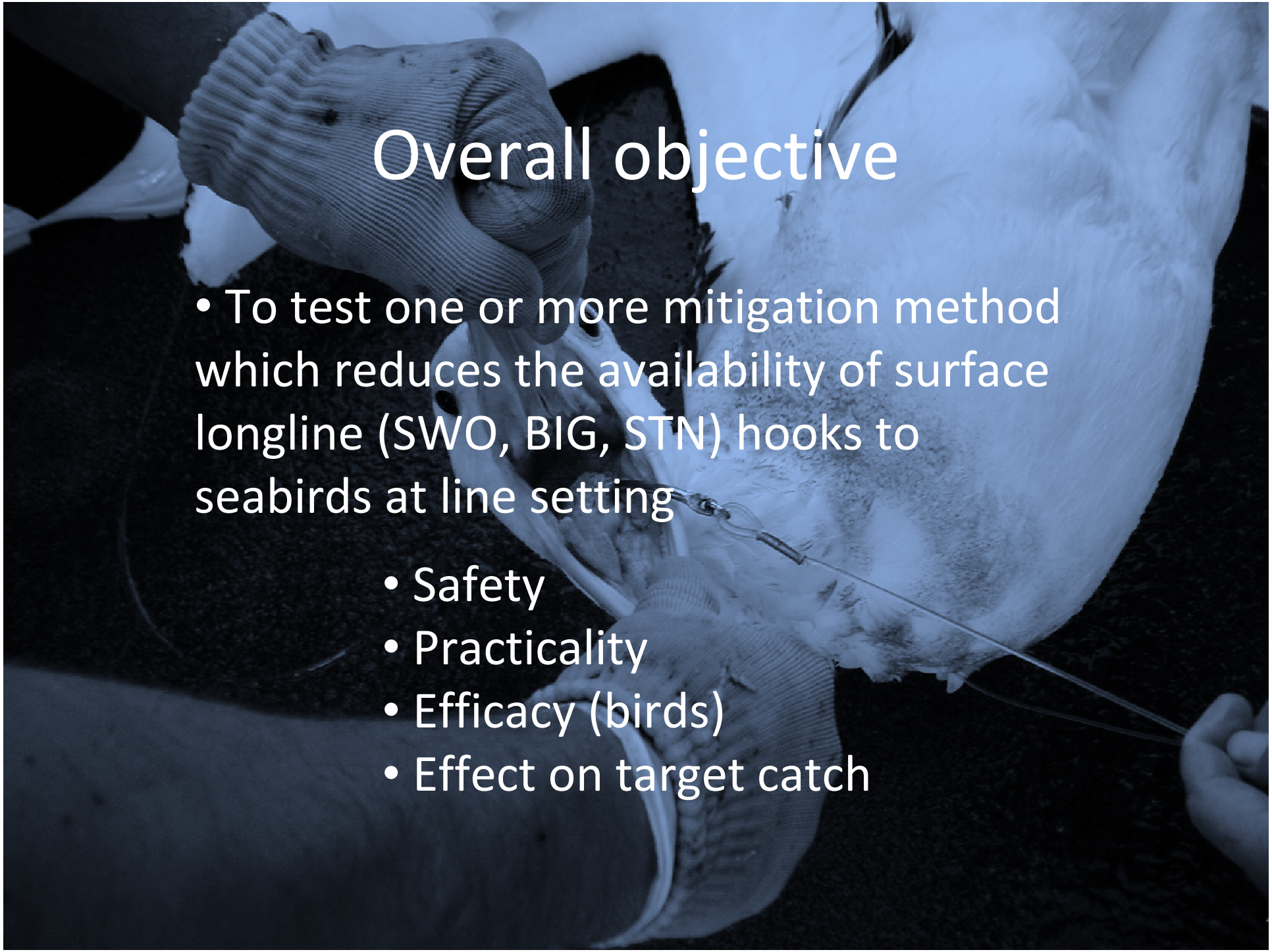
MIT2012-04:
Surface longline seabird mitigation Update



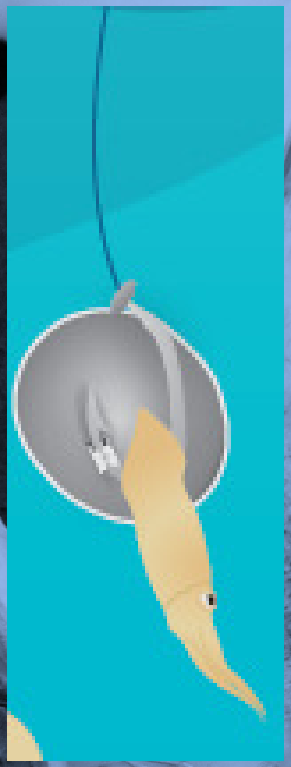
Overall objective

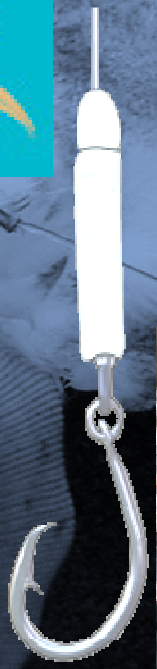
- To test one or more mitigation method which reduces the availability of surface longline (SWO, BIG, STN) hooks to seabirds at line setting
  - Safety
  - Practicality
  - Efficacy (birds)
  - Effect on target catch

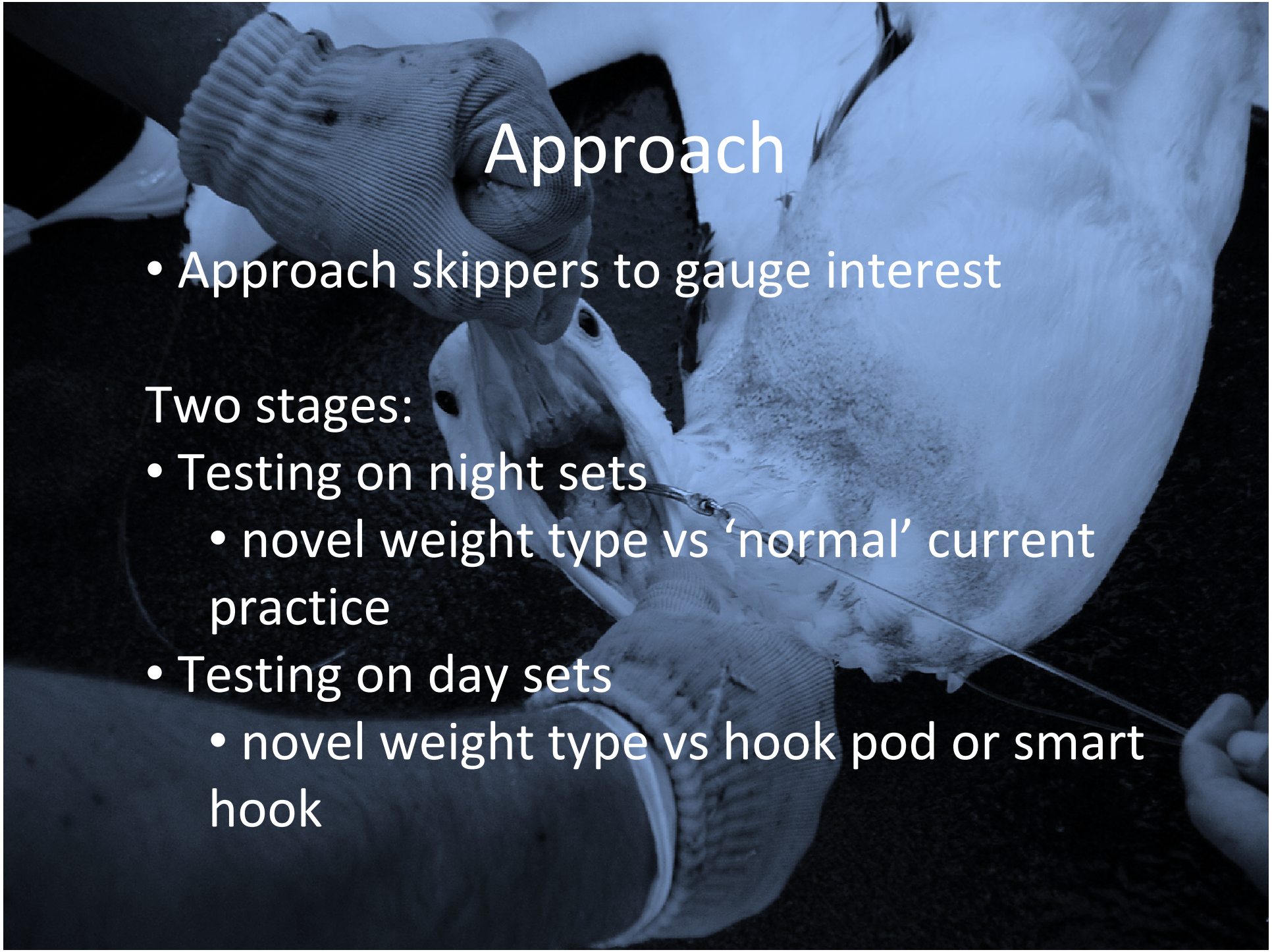
Approach

5 possible measures:

- lumo leads
- safeleads
- hook pod
- double-weighted branchlines
- smart tuna hook





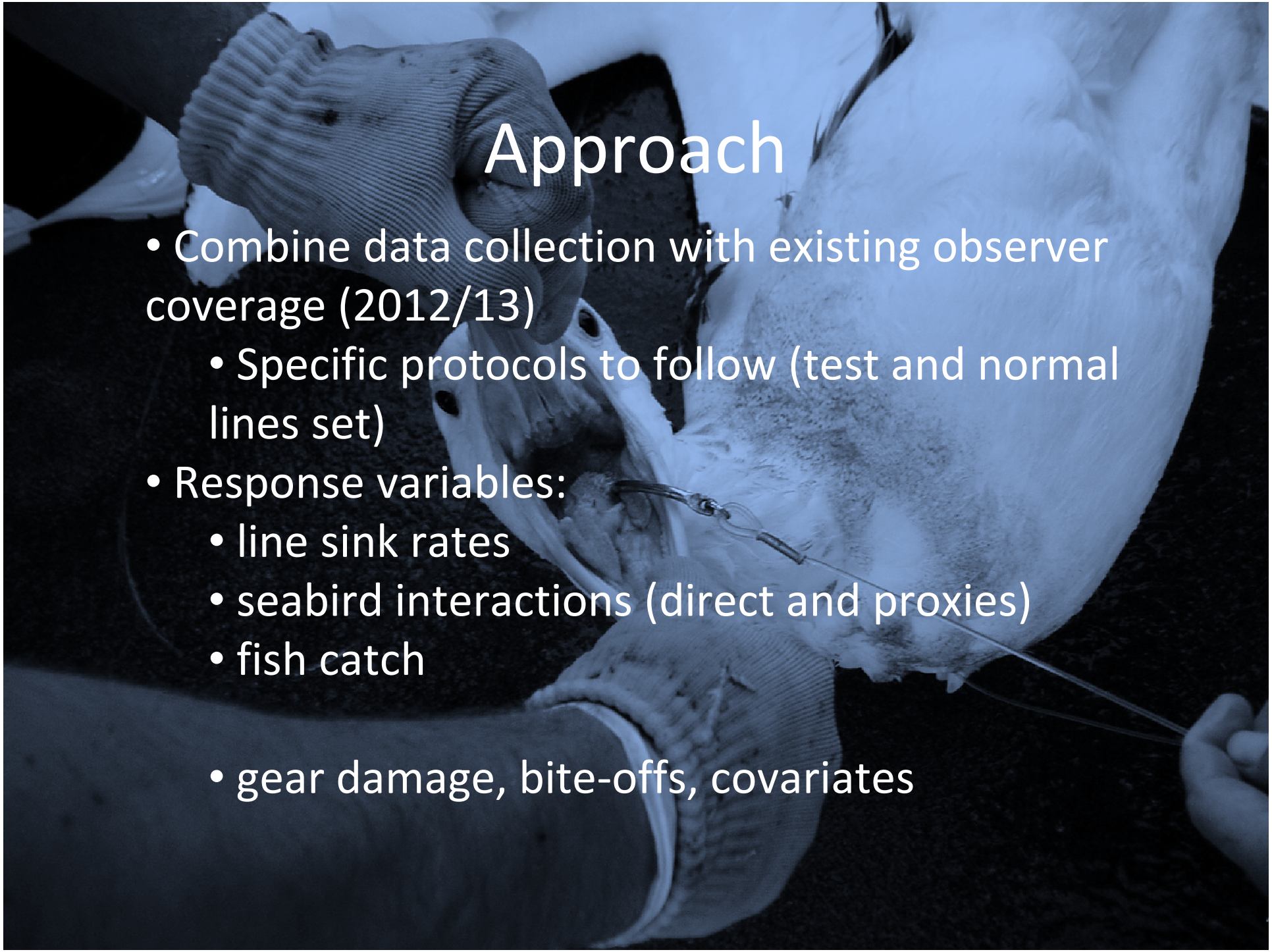


Approach

- Approach skippers to gauge interest

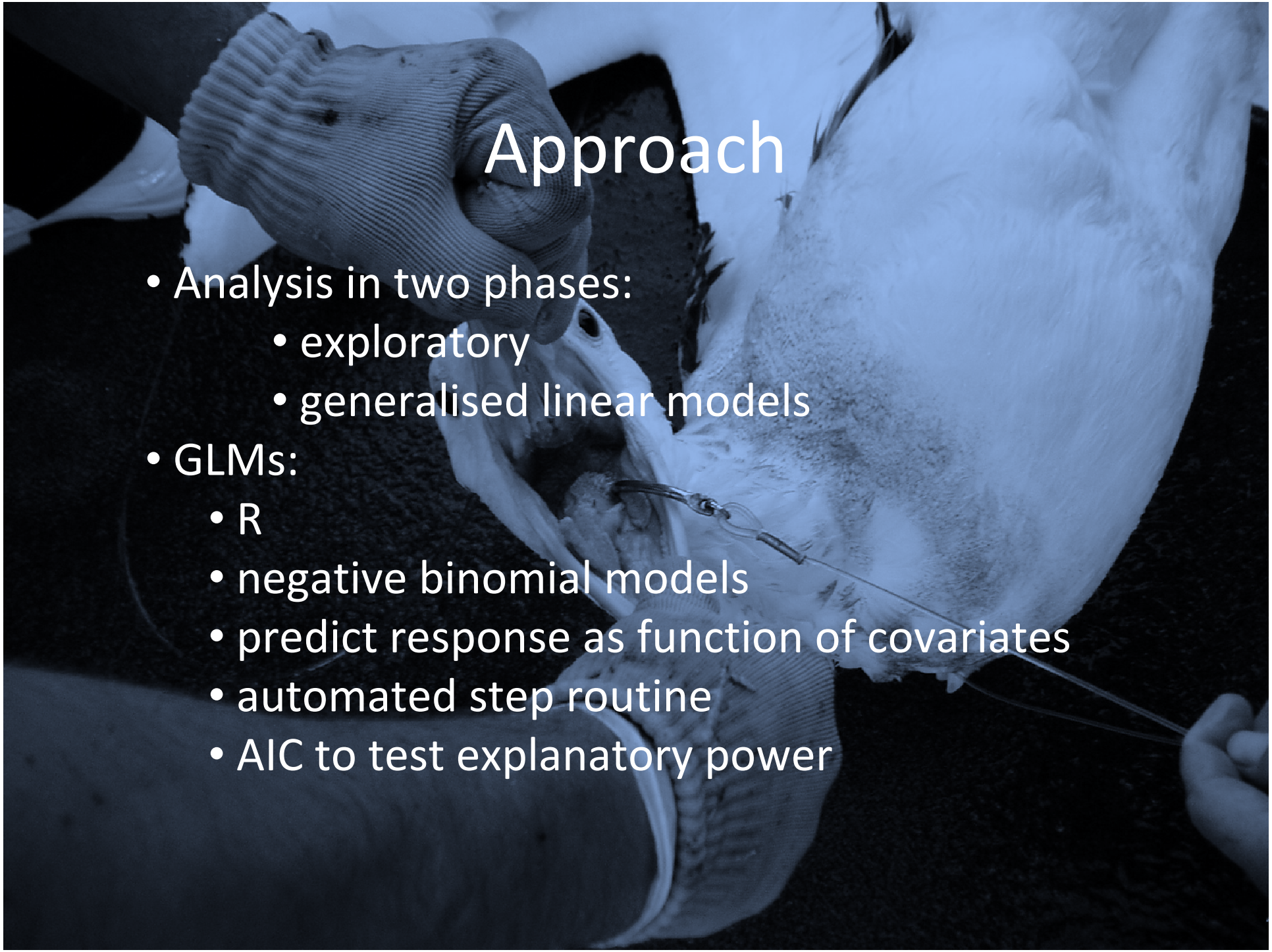
Two stages:

- Testing on night sets
  - novel weight type vs ‘normal’ current practice
- Testing on day sets
  - novel weight type vs hook pod or smart hook



Approach

- Combine data collection with existing observer coverage (2012/13)
  - Specific protocols to follow (test and normal lines set)
- Response variables:
  - line sink rates
  - seabird interactions (direct and proxies)
  - fish catch
  - gear damage, bite-offs, covariates



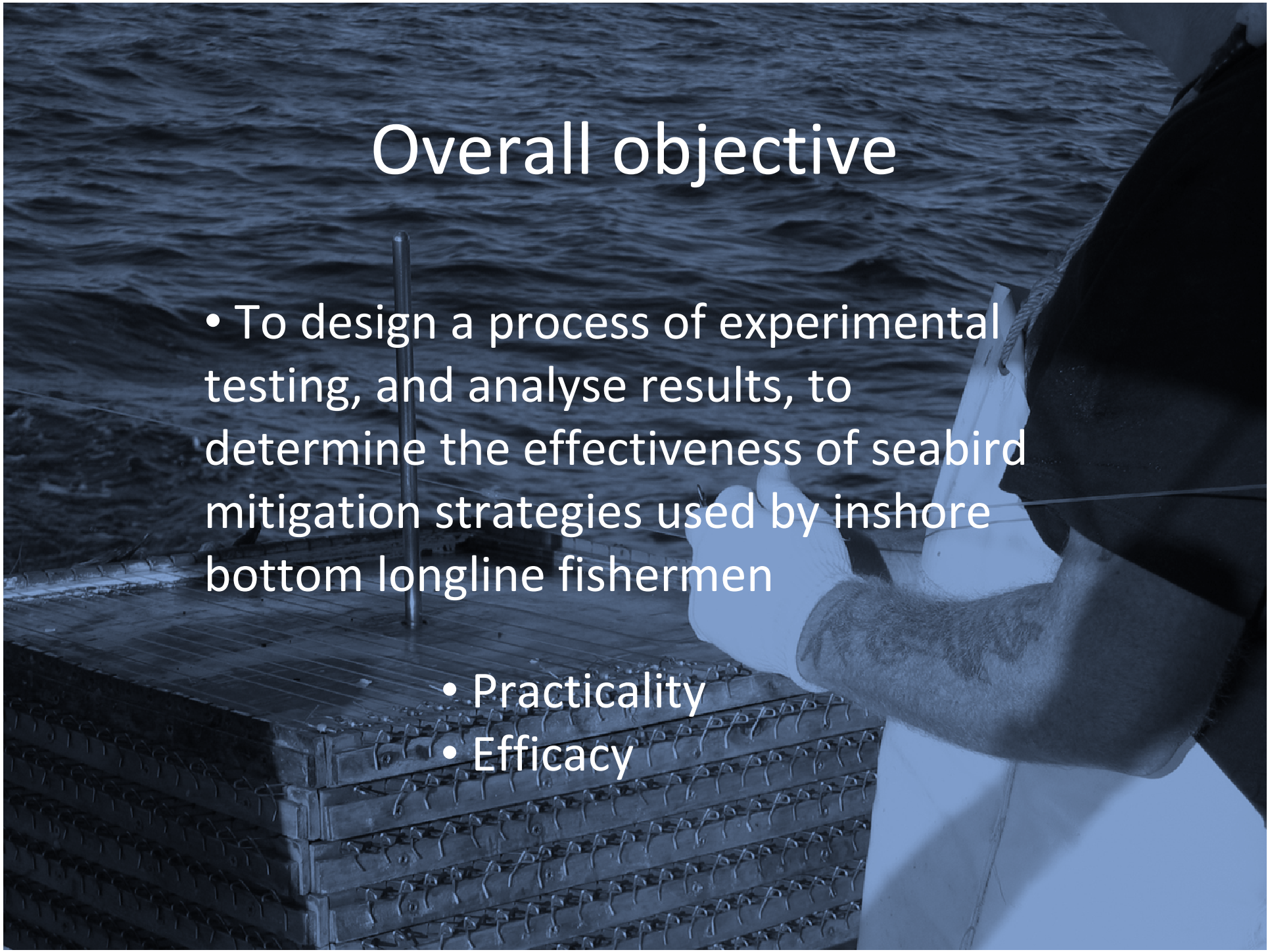
Approach

- Analysis in two phases:
    - exploratory
    - generalised linear models
- GLMs:
    - R
    - negative binomial models
    - predict response as function of covariates
    - automated step routine
    - AIC to test explanatory power

Next steps

- Engaging skippers
- Power analysis: target catch
- Protocol development (underway)
- Implementation
- Analysis and conclusions

MIT2012-01:
Inshore bottom longline seabird mitigation – design and analysis



Overall objective

- To design a process of experimental testing, and analyse results, to determine the effectiveness of seabird mitigation strategies used by inshore bottom longline fishermen

  - Practicality
  - Efficacy

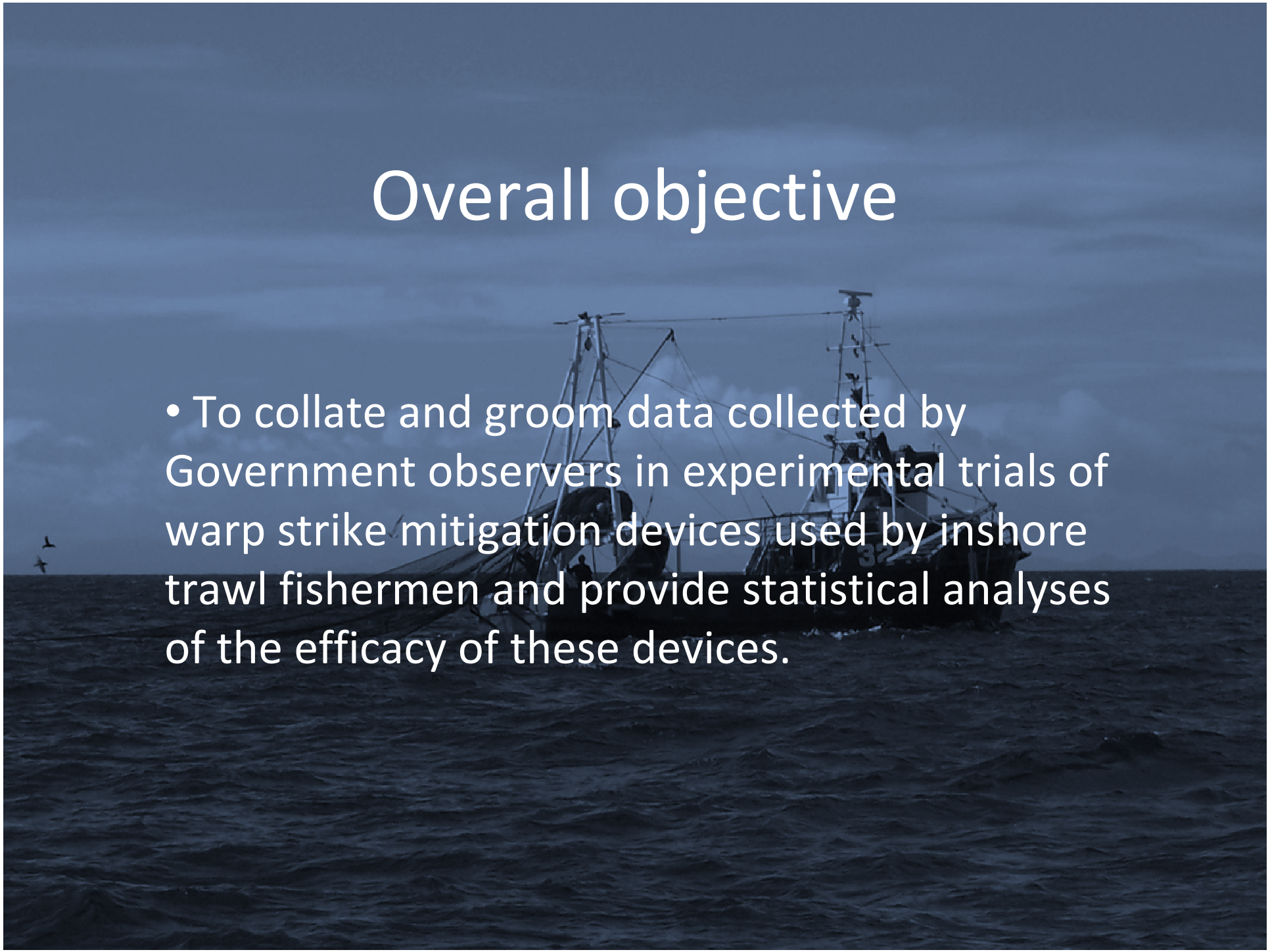
Approach

- Document aspects current operations that may affect seabird captures
  - line setting speed and tension
- Refining mitigation measures in use
  - tori lines
- Investigating new measures
  - float rope arrangements
- Exploring development of additional measures
  - haul mitigation (bait retention)

Next steps

- Plan with existing inshore BLL observer coverage (2012/13)
- Protocol development (underway)
- Implementation
- Analysis and conclusions

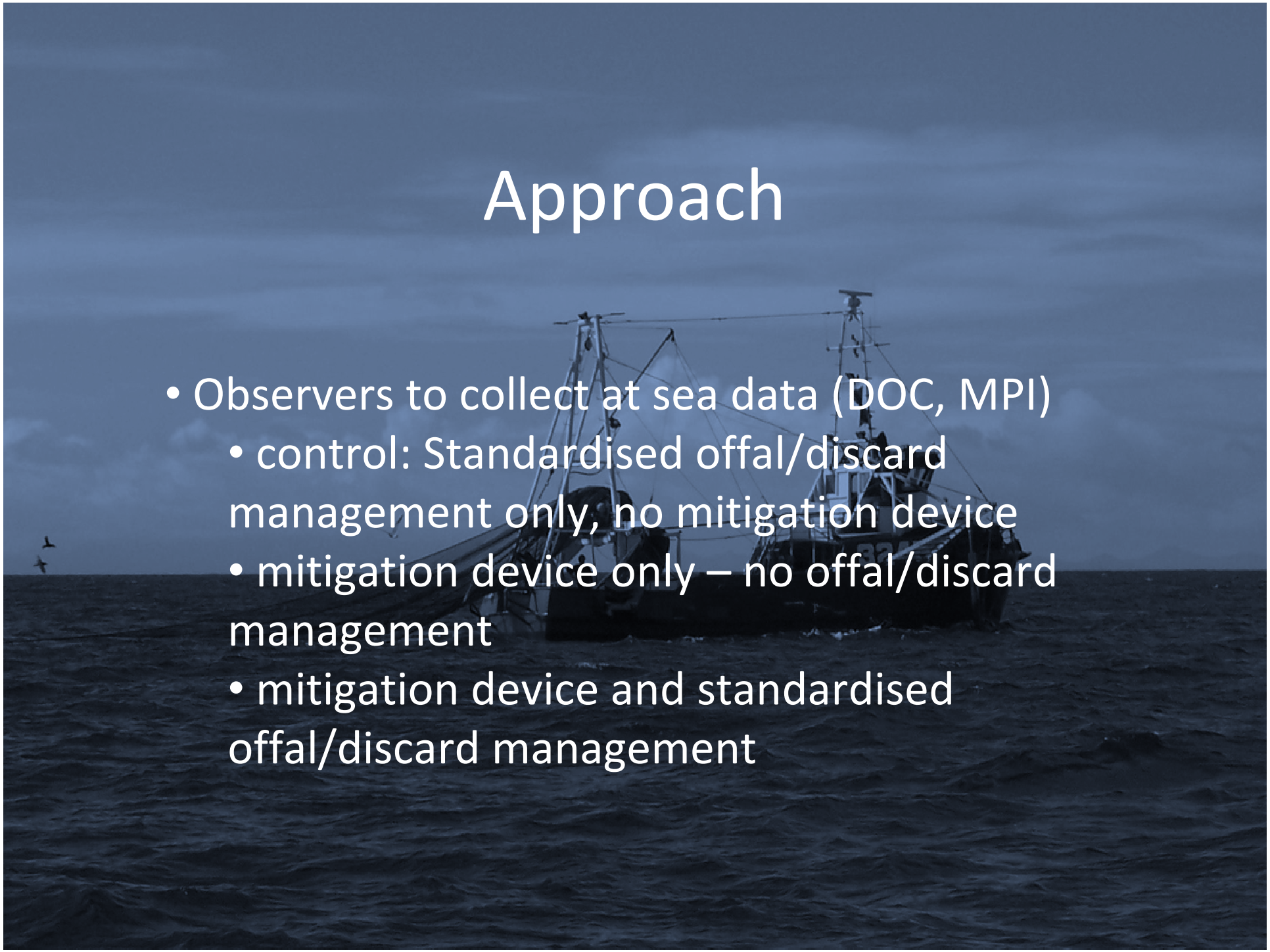
MIT2012-02:
Inshore trawl warp strike mitigation – Analysis of effectiveness



Overall objective

- To collate and groom data collected by Government observers in experimental trials of warp strike mitigation devices used by inshore trawl fishermen and provide statistical analyses of the efficacy of these devices.

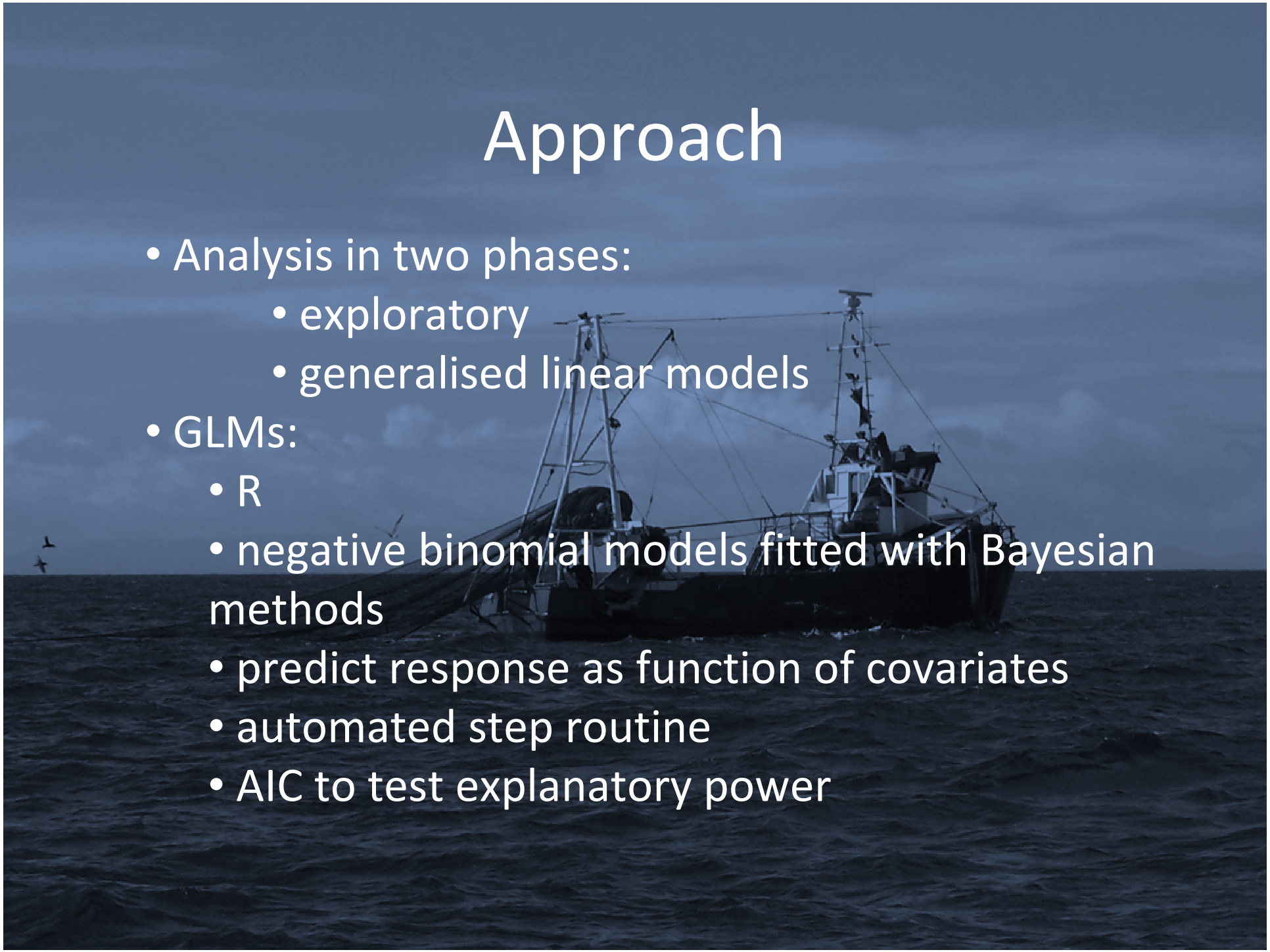
Approach



- Observers to collect at sea data (DOC, MPI)
  - control: Standardised offal/discard management only, no mitigation device
  - mitigation device only – no offal/discard management
  - mitigation device and standardised offal/discard management

Approach

- Random assignation of treatments at sea
- Response variables:
  - seabird abundance
  - strikes on trawl warps and mitigation devices
- Covariates: discharge characteristics, swell height and direction, wind speed and direction, other vessels



Approach

- Analysis in two phases:
    - exploratory
    - generalised linear models
- GLMs:
    - R
    - negative binomial models fitted with Bayesian methods
    - predict response as function of covariates
    - automated step routine
    - AIC to test explanatory power

Next steps

- Receive data collected by observers at sea
- Commence exploratory analysis