

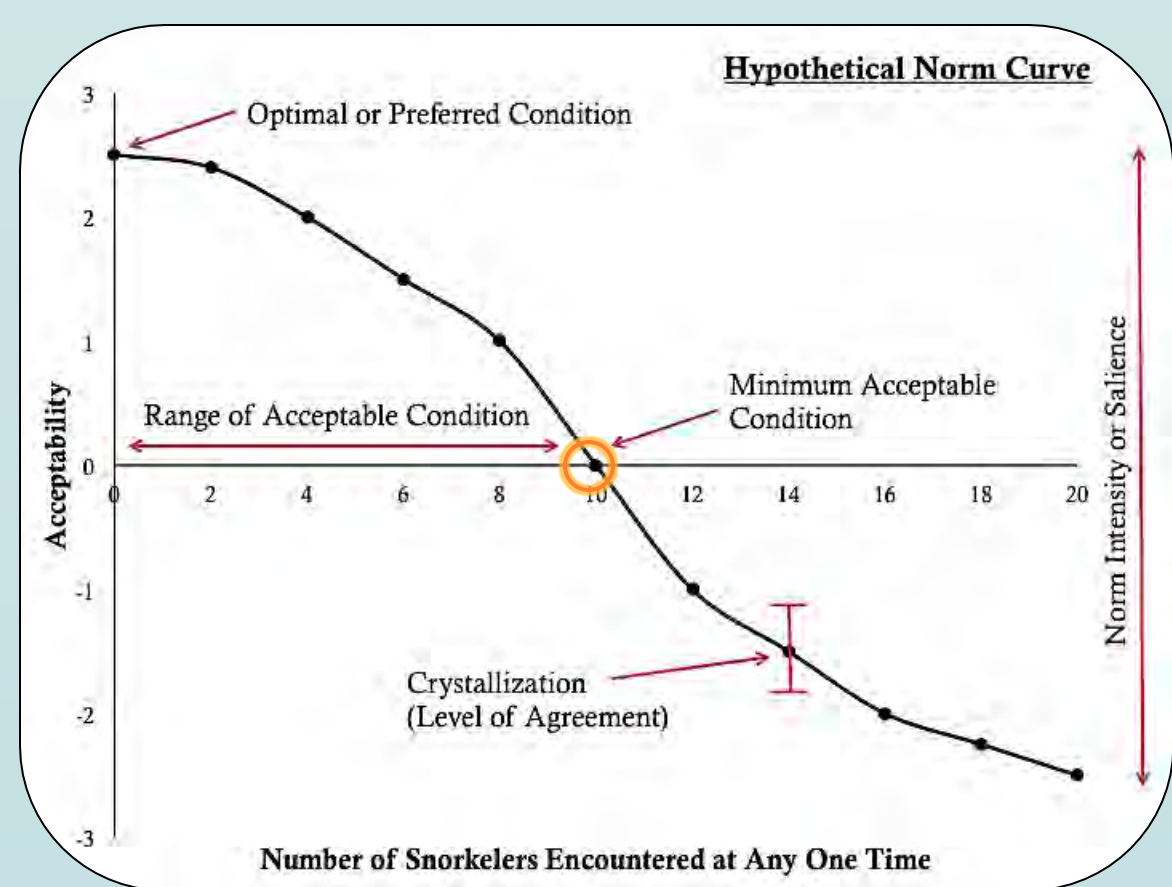
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1. Trade-offs in Coral Reef Ecosystems

- Popular tourism destinations
- Management challenge: Ecosystem protection & use
- Trade-offs – where do we draw the line?



2. Normative Theory



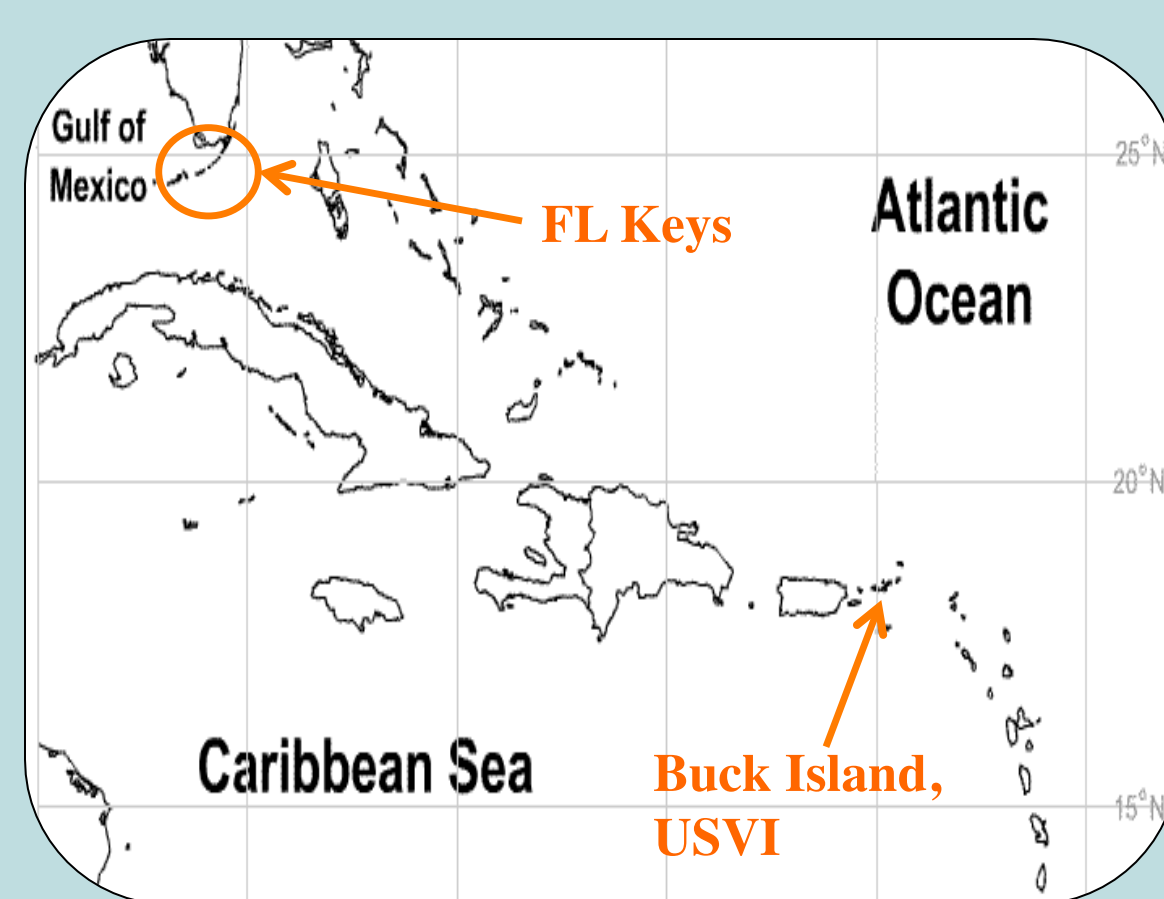
- **Norms** – standards used to evaluate ecological or social conditions
- Norm curves highlight when *Acceptable* → *Unacceptable*

3. Objectives

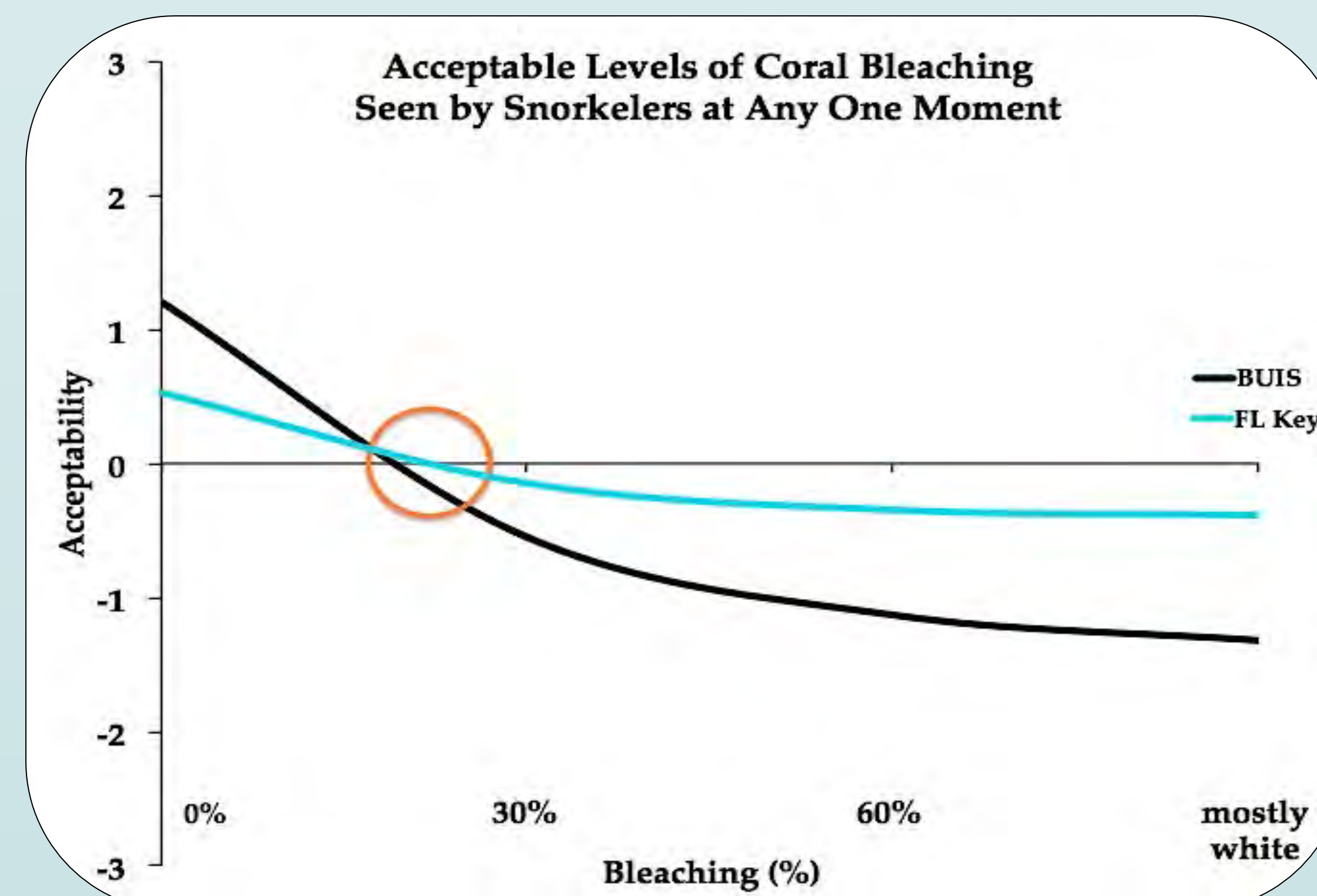
- Determine when ‘acceptable’ resource conditions/levels of use become ‘unacceptable’
- Examine similarities/differences in norm curves for snorkelers in two regions

4. Project Design

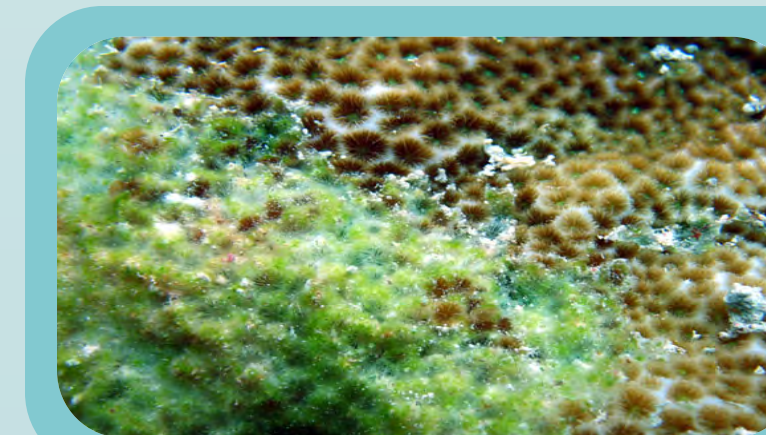
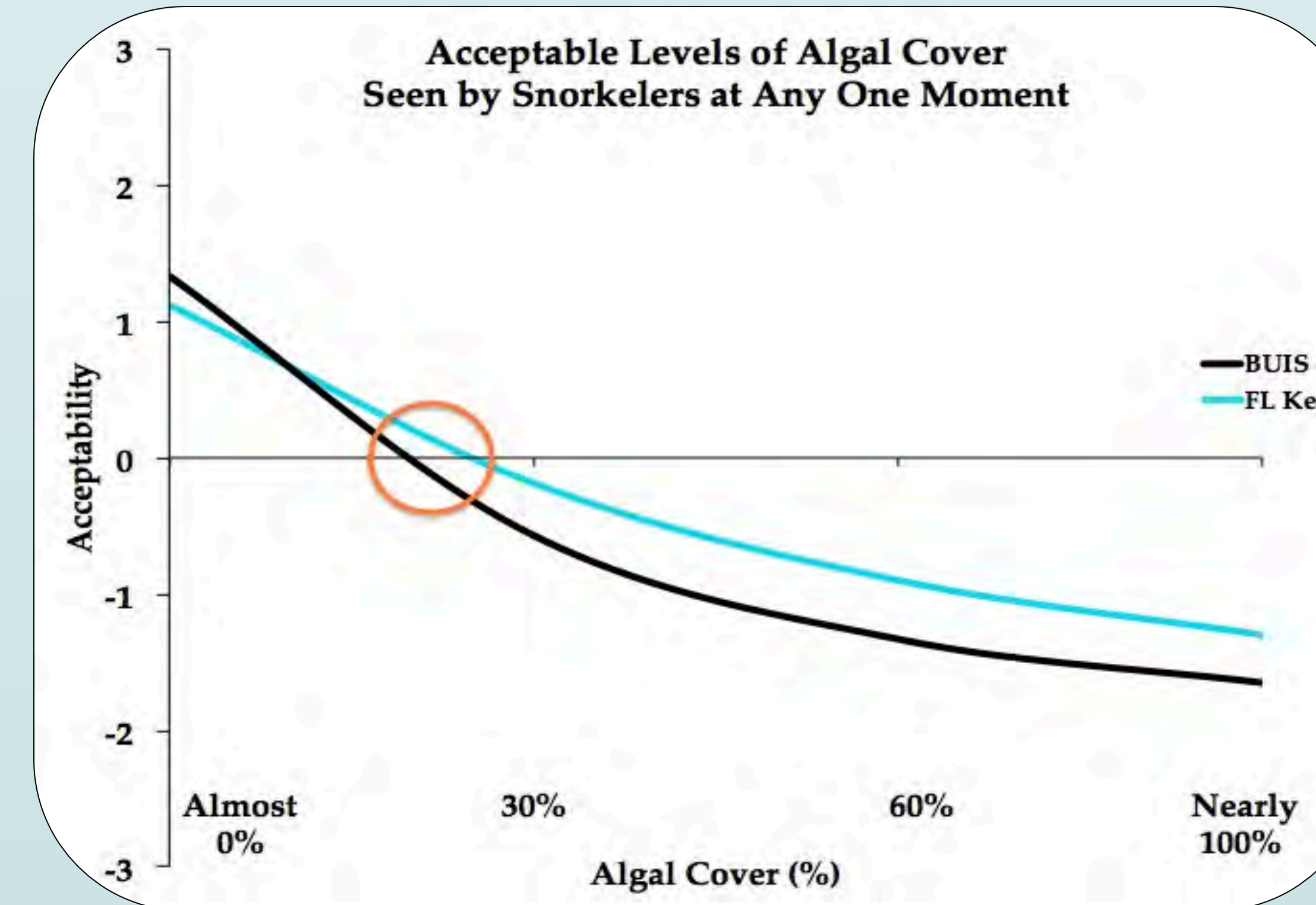
- Two studies
 - 1) FL Keys, 2008 (N = 558 snorkelers)
 - 2) Buck Island Reef NM, 2013 (N = 578 snorkelers)
- On-site intercept sampling
- Mail/Internet survey methodology (Dillman, 1978)



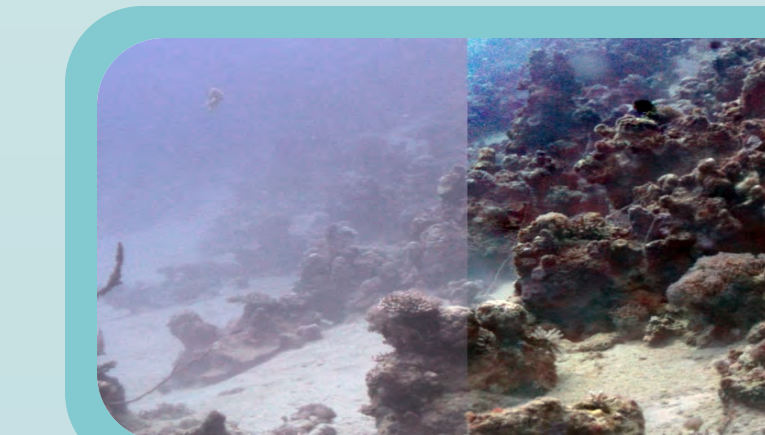
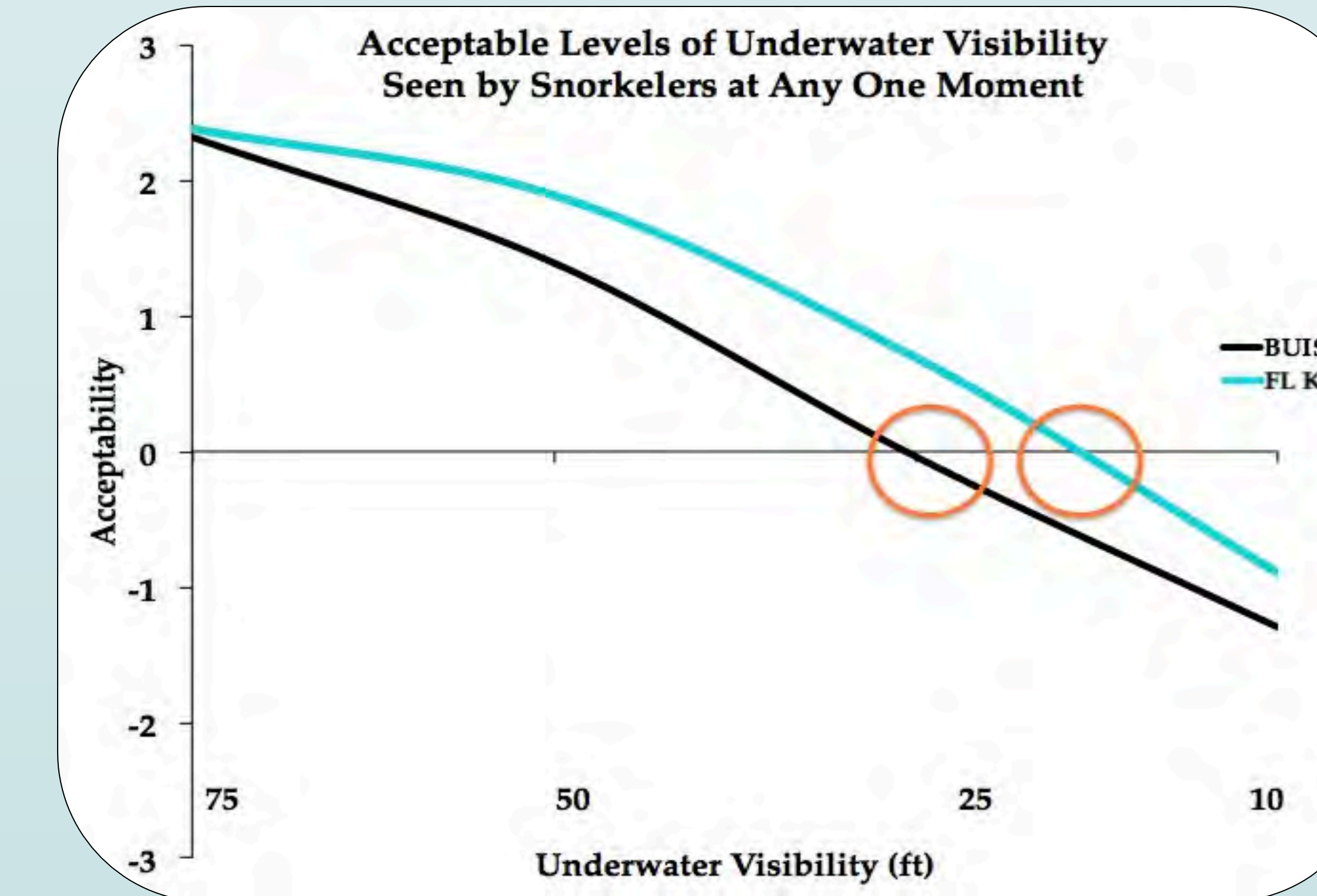
5. Resource Conditions



FL Keys: 0% – 25% coral bleaching
BUIS: 0% – 25% coral bleaching

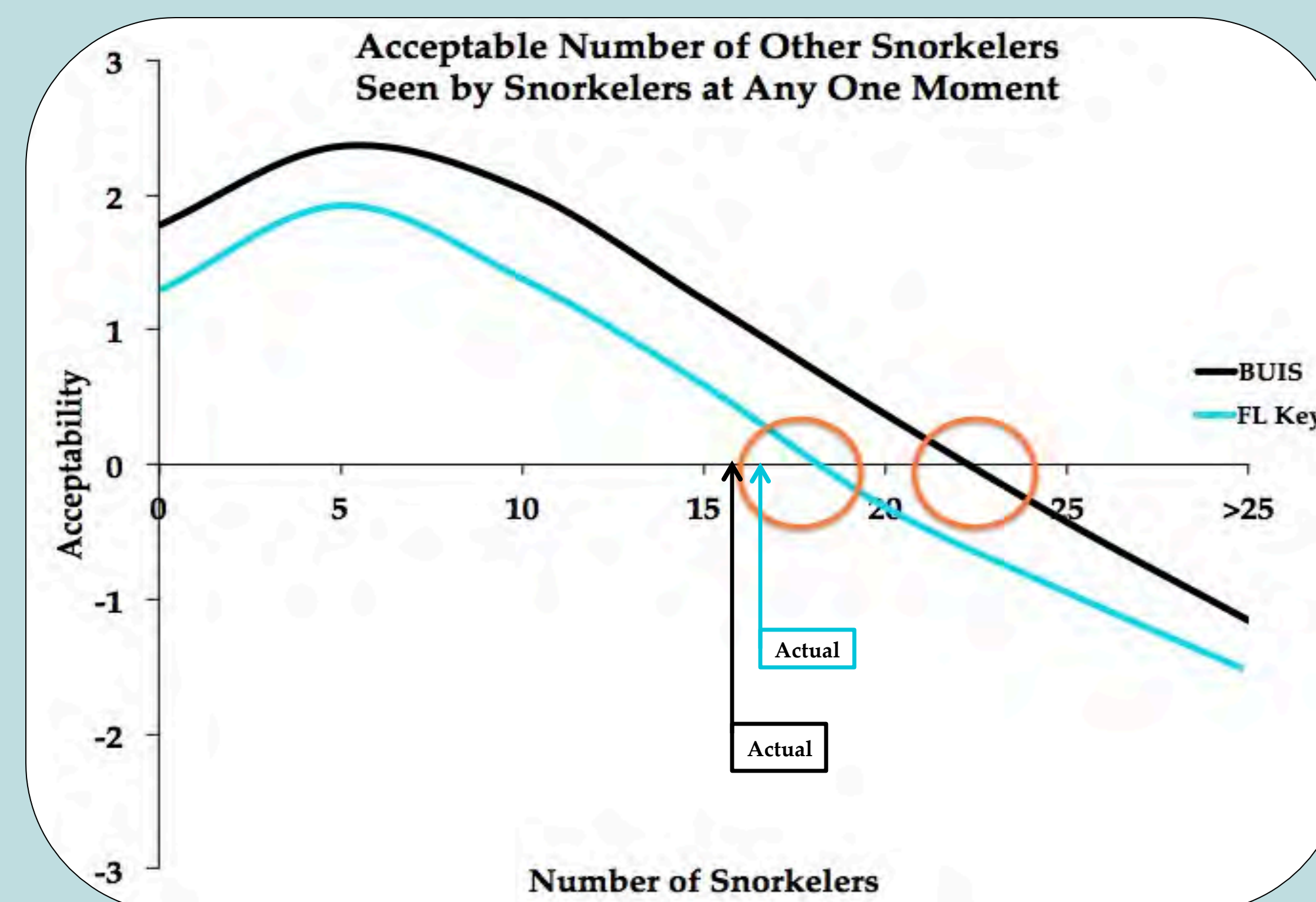


FL Keys: 0% – 25% algal cover
BUIS: 0% – 25% algal cover

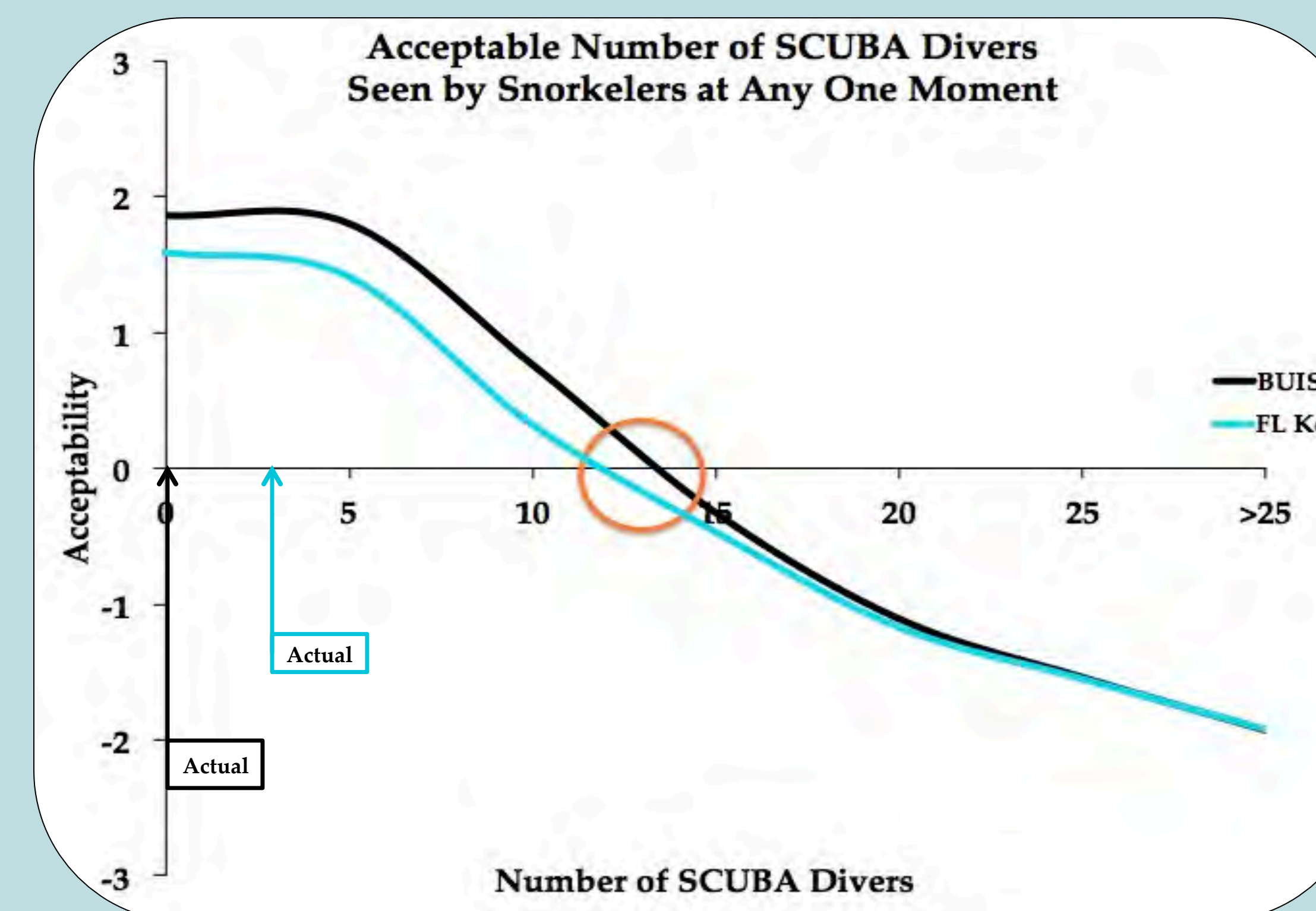


FL Keys: 75 ft. – 20 ft. UW visibility
BUIS: 75 ft. – 25 ft. UW visibility

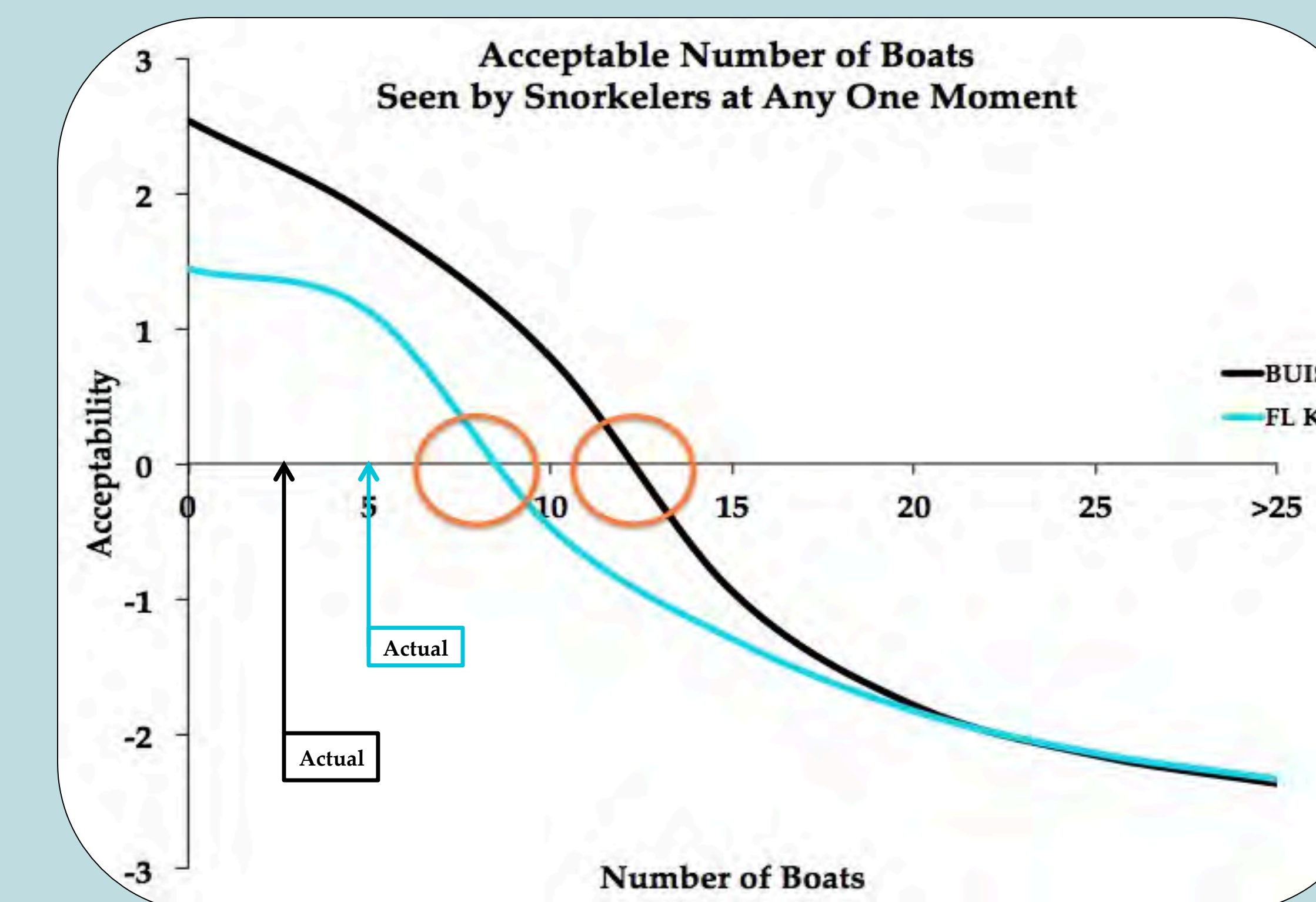
6. Recreational Use



FL Keys: 0 – 18 other snorkelers
BUIS: 0 – 23 other snorkelers



FL Keys: 0 – 12 SCUBA divers
BUIS: 0 – 13 SCUBA divers



FL Keys: 0 – 8 boats
BUIS: 0 – 13 boats

7. Take-Home Messages

- Snorkelers in FL & BUIS have similar norms
- Tolerate some ecosystem impacts; presence of other users
- Acceptable conditions ≠ “pristine”
- Could increase use levels (if ecologically feasible)
- Norm curves help determine acceptable pairing of social/ecological change

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