



# Public preferences for marine conservation: Mingulay & LoVe

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**Mingulay**

**LoVe**

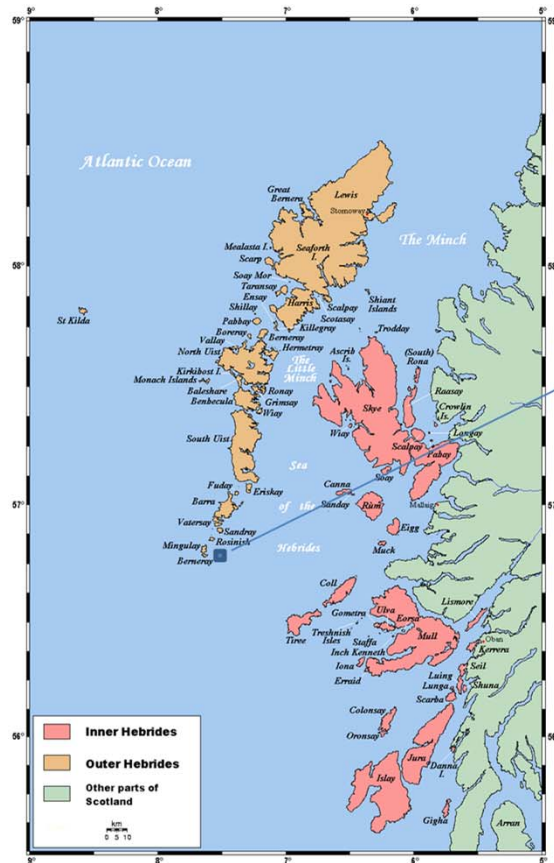
**Research question: do the general  
public value protection in the  
marine environment?**

**Azores**

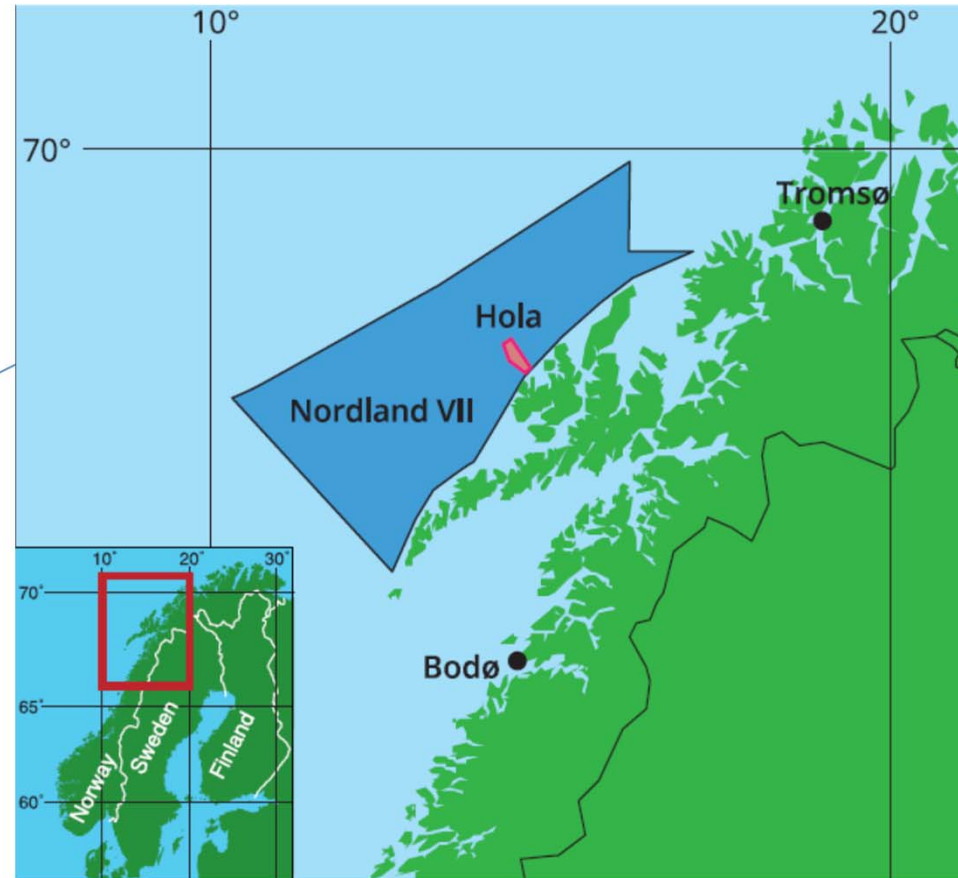
**Flemish Cap**



### THE MINGULAY REEF



### LOFOTEN VESTERÅLEN AND THE PROTECTED AREA HOLA




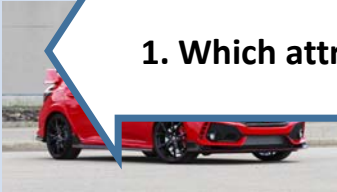


## Choice experiments

	VW Golf	Honda Civic
Brand		
Colour	Grey	Red
Fuel type	Petrol	Petrol
Number of doors	3 door	5 door
Price	£17,000	£30,000





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1. Which attributes influence choice?



## Choice experiments



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Brand		
Colour	Grey	Red
Fuel type	Petrol	Petrol
Number of doors	3 door	5 door
Price	£17,000	£30,000

1. Which attributes influence choice?

2. What is the marginal willingness to pay for a change in each of these?



## Choice experiment: car choice

	VW Golf	Honda Civic
Brand		 <p>1. Which attributes influence choice?</p>
Colour	Grey	<p>2. What is the marginal willingness to pay for a change in each of these?</p>
Fuel type	Petrol	<p>3. What is the total willingness to pay?</p>
Number of doors	3 door	5 door
Price	£17,000	



## Choice experiment: marine management

SCENARIO 1		Option A	Option B	Option C (current management)
Health of commercial fish stocks		High: >80% of commercial stocks at healthy stock levels	Moderate: 40 - 80% of commercial stocks at healthy stock levels	Low: <40% of commercial stocks at healthy stock levels
Density of Marine litter		Moderate (2 to 4 items of litter per mile <sup>2</sup> )	Good (0 to 1 item of litter per mile <sup>2</sup> )	Poor (5 to 8 items of litter per mile <sup>2</sup> )
Size of protected area		6% of the Sea of the Hebrides	15% of the Sea of the Hebrides	1% of the Sea of the Hebrides
Marine economy jobs created from sea based commercial activities in the area		+ 40 jobs	+ 20 jobs	No employment change
Additional costs (£ per person per year)		£ 30	£ 40	£ 0
Your choice for scenario 1 (please tick A, B or C)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



### HEALTHY FISH STOCKS

- High: > 80% of commercial stocks have healthy stock levels
- Moderate: 40 to 80% of commercial stocks have healthy stock levels
- Low: < 40% of commercial stocks in have healthy stock levels

### SIZE OF PROTECTED AREA

- 1% of the Sea of the Hebrides (current management)
- 6% of the Sea of the Hebrides 10% of the Sea of the Hebrides
- 15% of the Sea of the Hebrides

## Attributes: based on discussion of GES

### MARINE LITTER

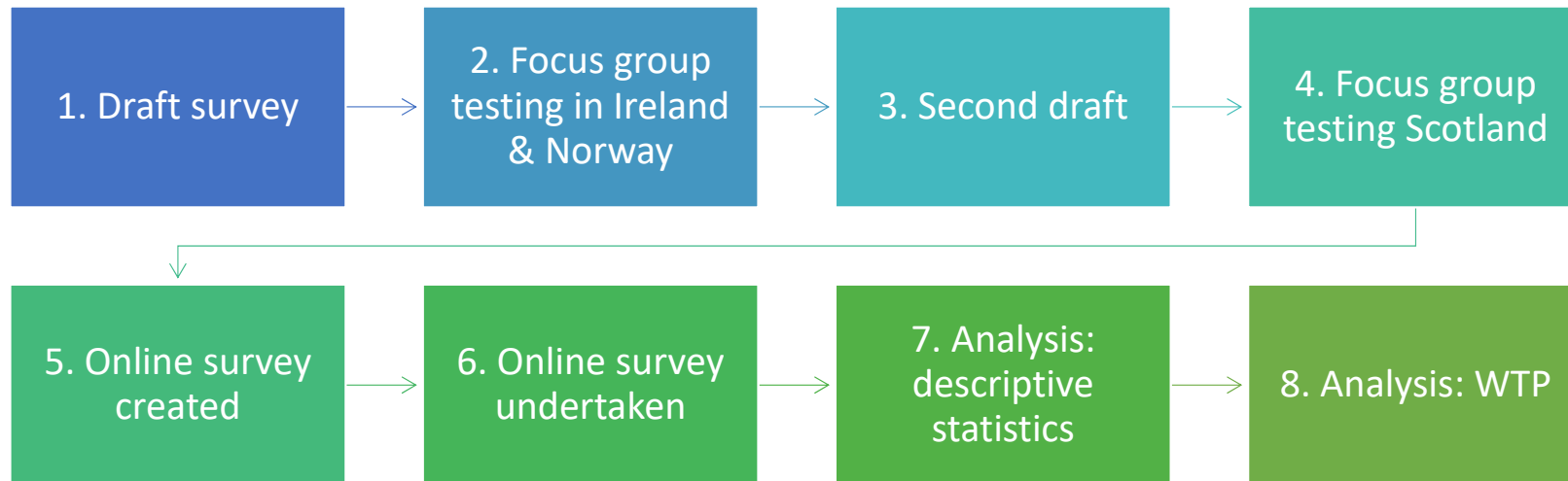
- Poor (5 to 8 items of litter per mile<sup>2</sup>)
- Moderate (2 to 4 items of litter per mile<sup>2</sup>)
- Good (0 to 1 item of litter per mile<sup>2</sup>)

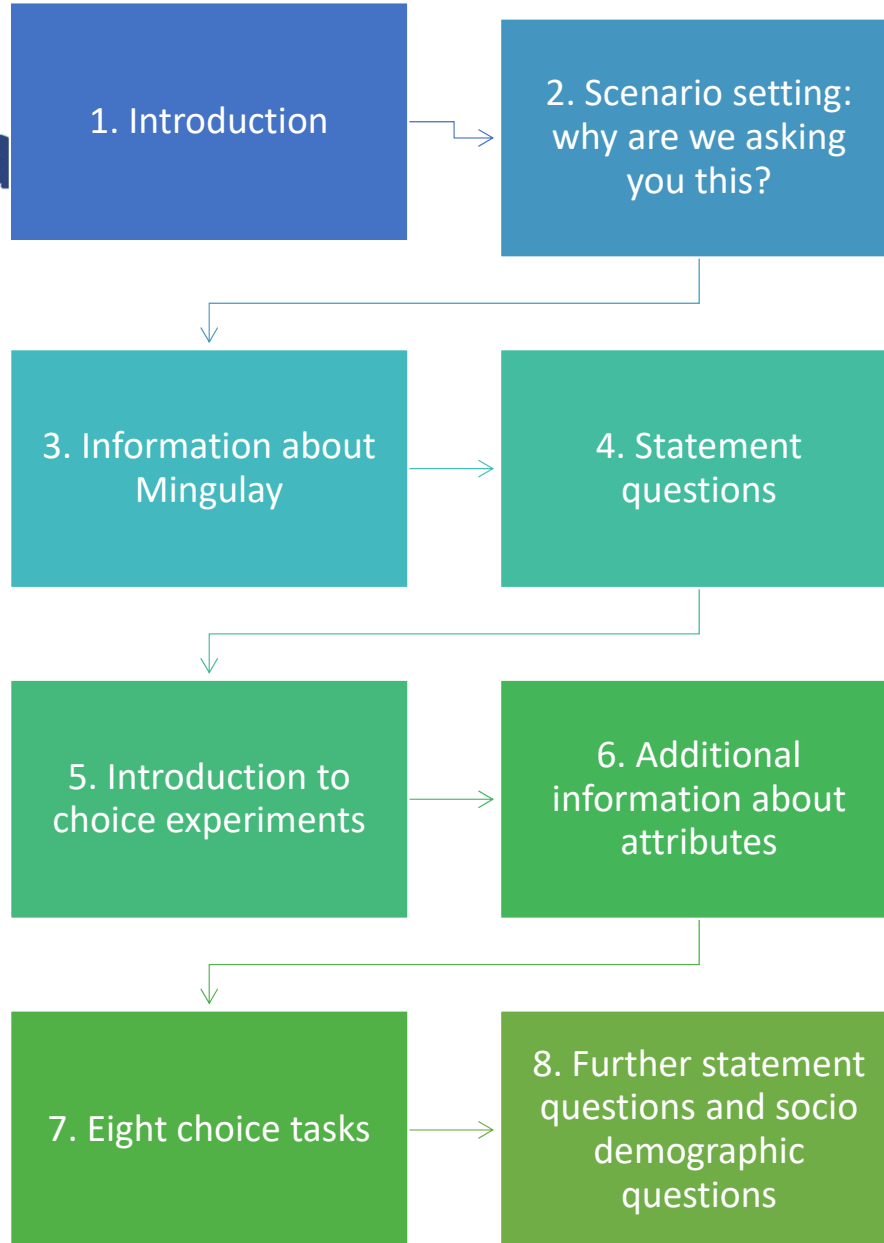
### MARINE ECONOMY JOBS

- + 20 jobs,
- + 40 jobs,
- No employment change



## Survey Design





## SCOTLAND'S SEAS AND WILDLIFE SURVEY

Get involved in shaping the future of new marine management options off the coast of Scotland.



This online survey has been launched to find out more about what people know about Scotland's seas and wildlife and how they would like this to be managed in the future.

### WHAT IS THE SCOTTISH MARINE SURVEY?

Researchers from across the UK and Europe are involved in an internationally funded project with scope to examine the marine biology and the economic management of the deep sea in the North Atlantic.

Click here for complete project details [ATLAS](#)

### CHOICE EXPERIMENT

The Scottish Government are responsible for delivering new plans on how best to manage Scotland's deep seas and wildlife. As part of this scientists are assessing the "health" or the environmental quality of the deep sea, including the Mingulay Reef Complex, with regard to:

- Health of fish stocks
- Amount of marine litter
- Size of area that is protected
- Creation of new marine jobs

Different levels of each of these can be delivered as part of the management plan: i.e. more or less jobs, more or less marine litter, healthier fish stocks and a larger protected area. We would like you to think about different "bundles" of these aspects of management and as a tax payer how much you would be willing to pay for these different management aspects.

Any changes from the status quo would need to be funded by the Scottish taxpayer. This would take the form of an increase to annual personal income tax rates over a 10 year period and 'ring-fenced' into a secure marine fund.

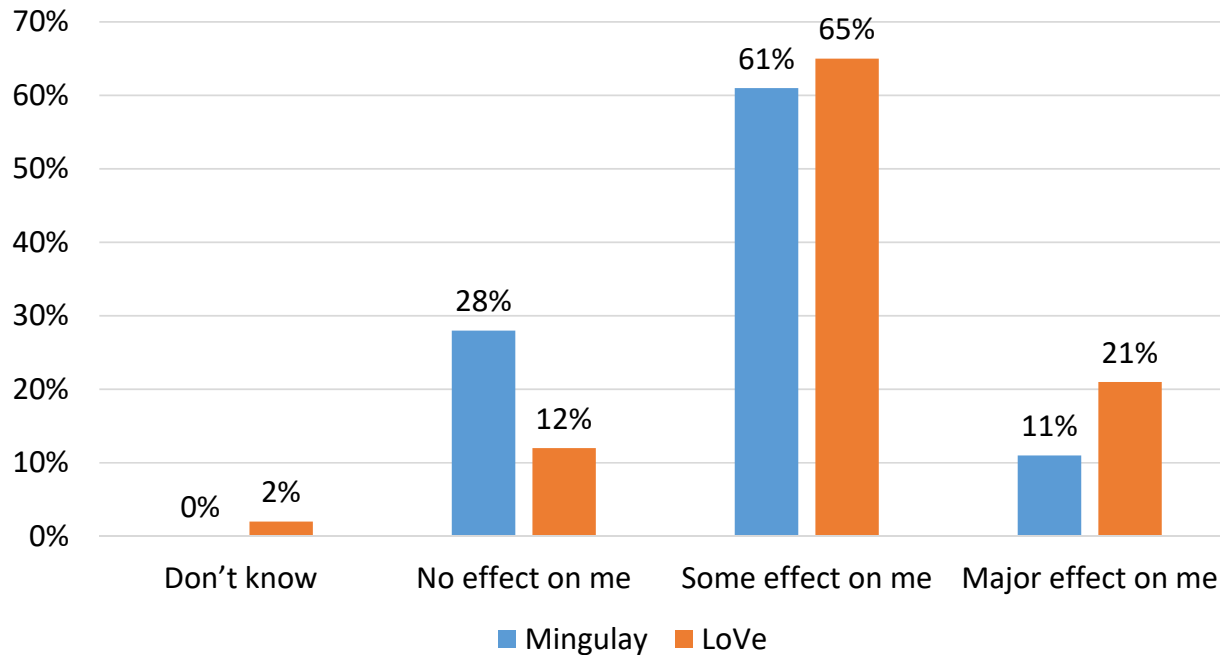


## Summary Statistics

Mingulay		LoVe	
	Percentage		Percentage
Third level education	52%	Third level education	86%
Resident of Highlands and Islands	6%		
Have visited island of Mingulay	2%	Have visited islands of Lofoten-Vesteralen	64%
Have visited island of Barra	12%		
Have visited elsewhere in the Outer Hebrides	24%		
Heard of cold-water coral reefs in Mingulay previously	15%	Heard of cold-water coral reefs in Lofoten-Vesteralen previously	59%
Member of household employed in sea related industry	9%	Member of household employed in sea related industry	16%

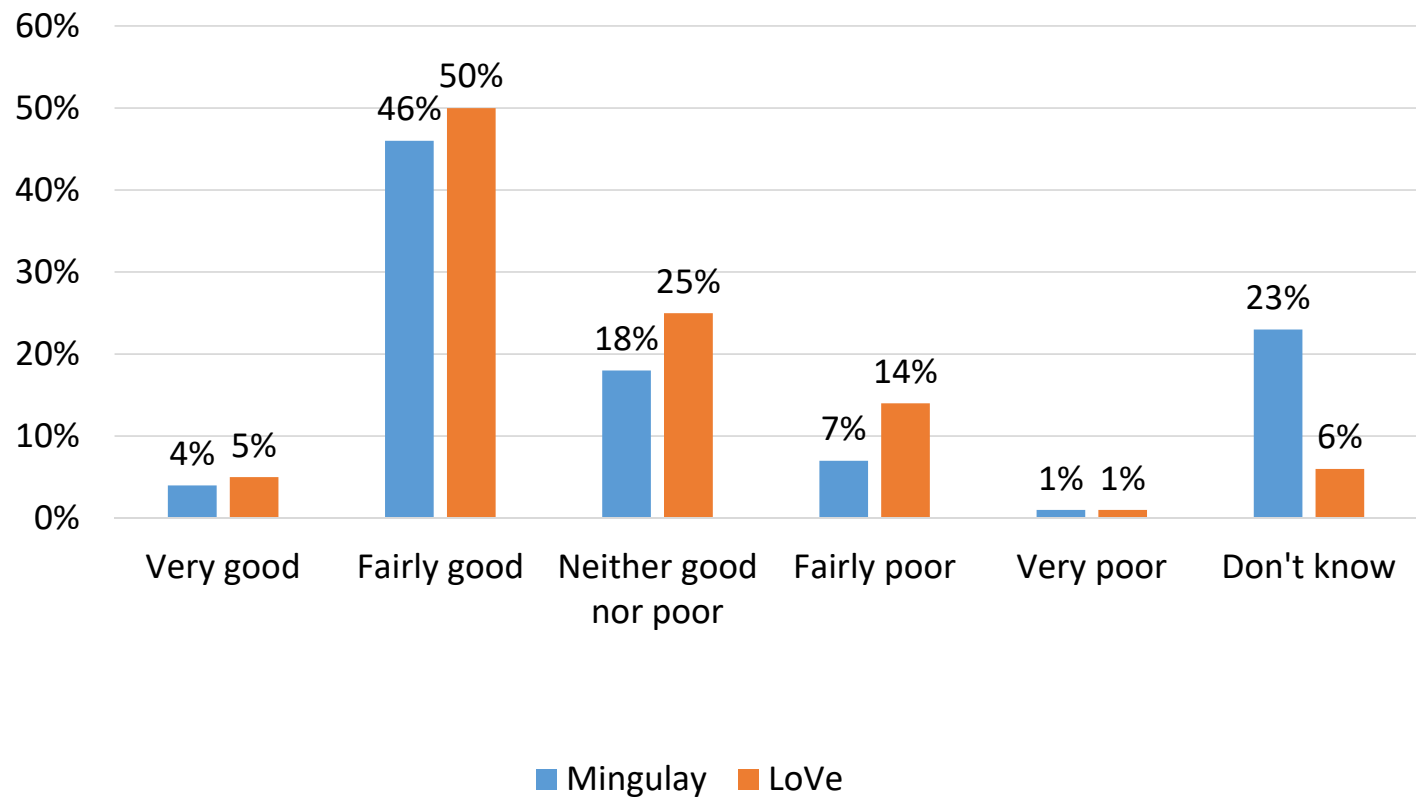


## Do you think changes to Mingulay / LoVe will have an effect on you personally?



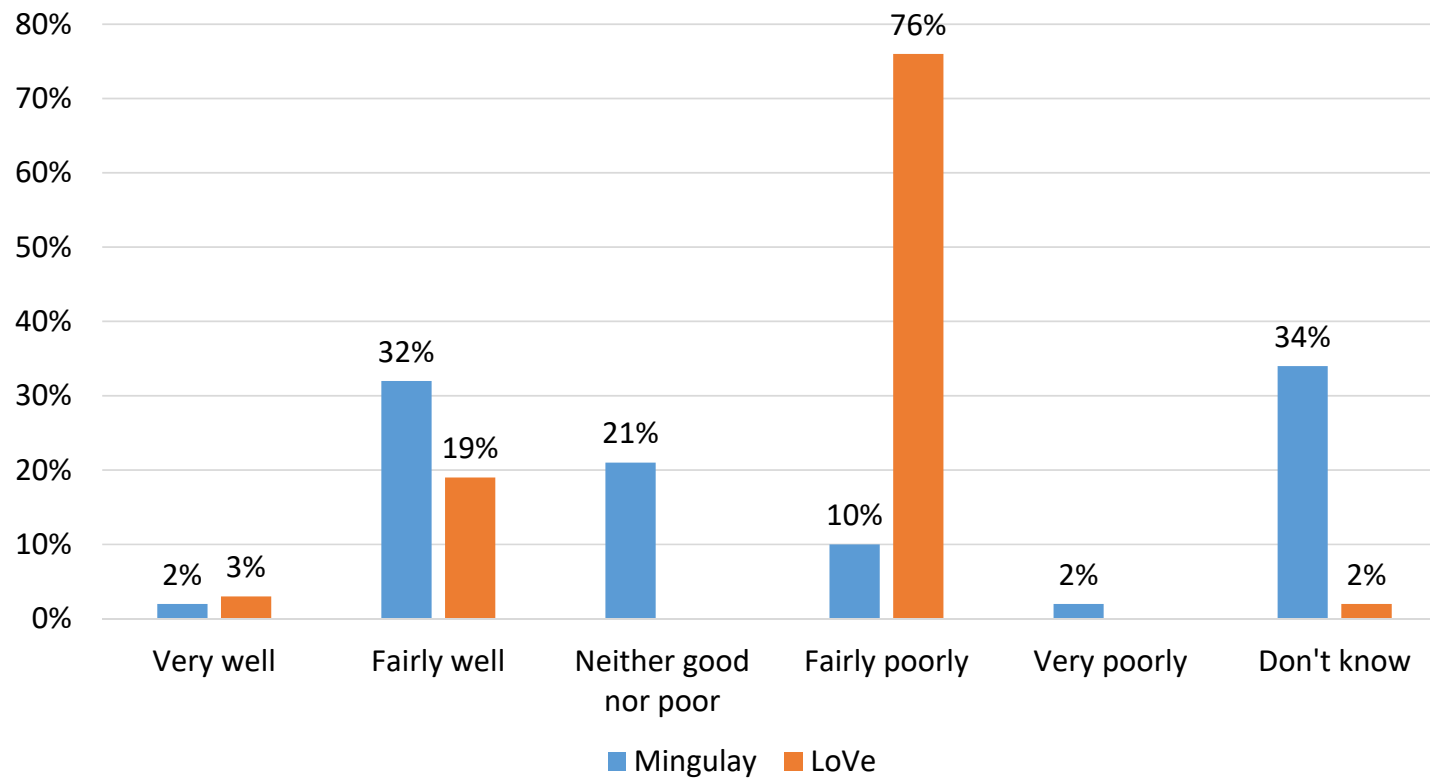


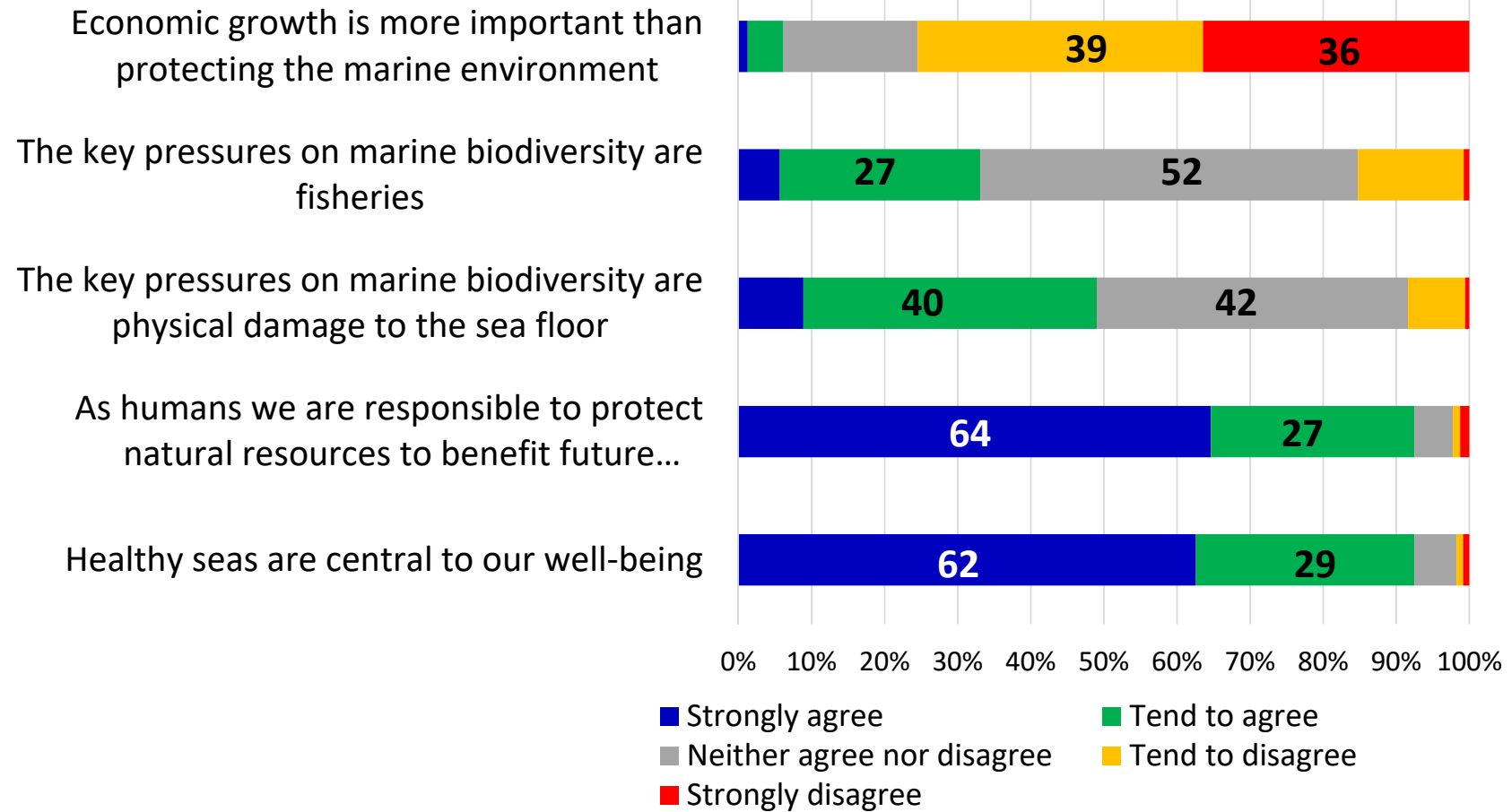
## Perceived condition of deep sea in your area



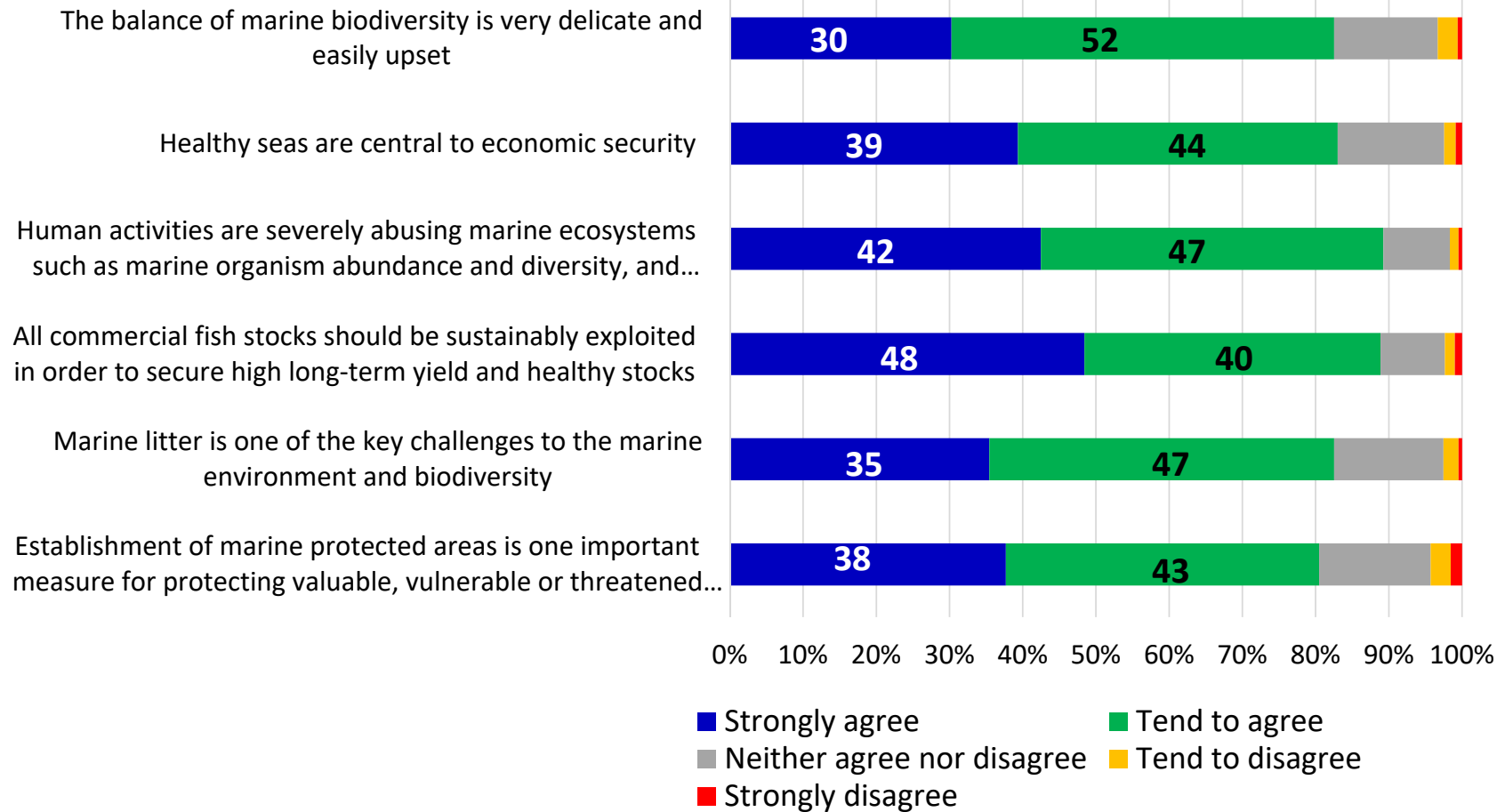


## How well do you think sea areas are managed?



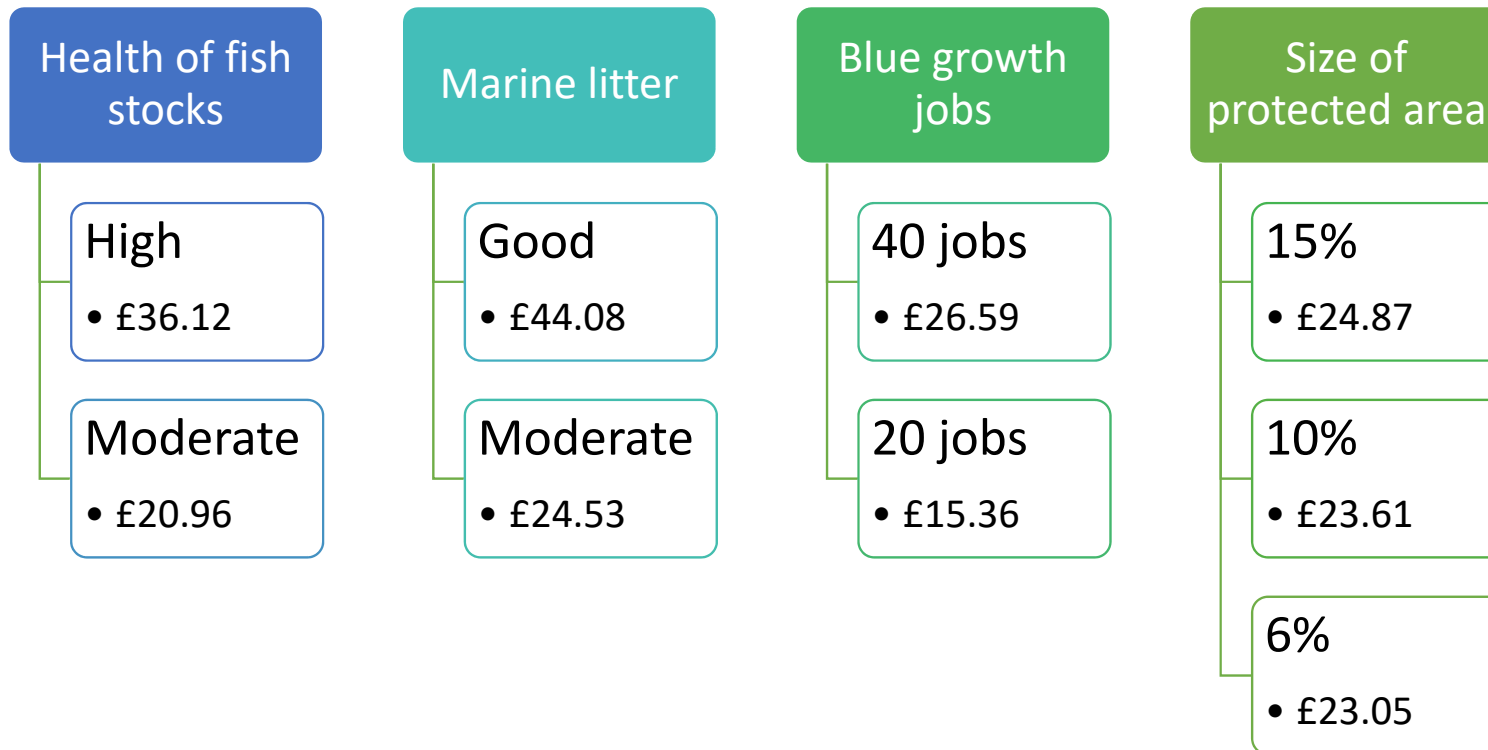






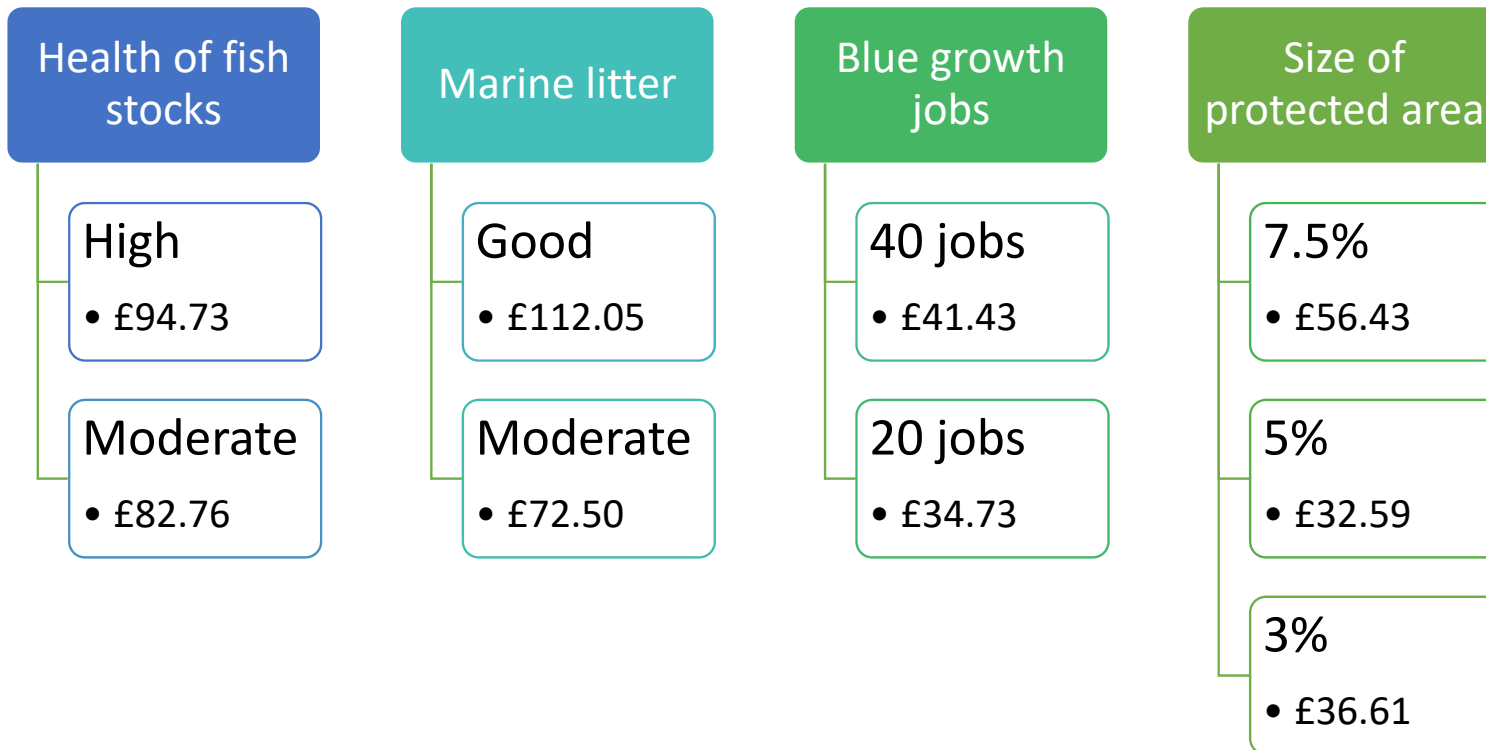


## Marginal Willingness to Pay - Mingulay





## Marginal Willingness to Pay - LoVe

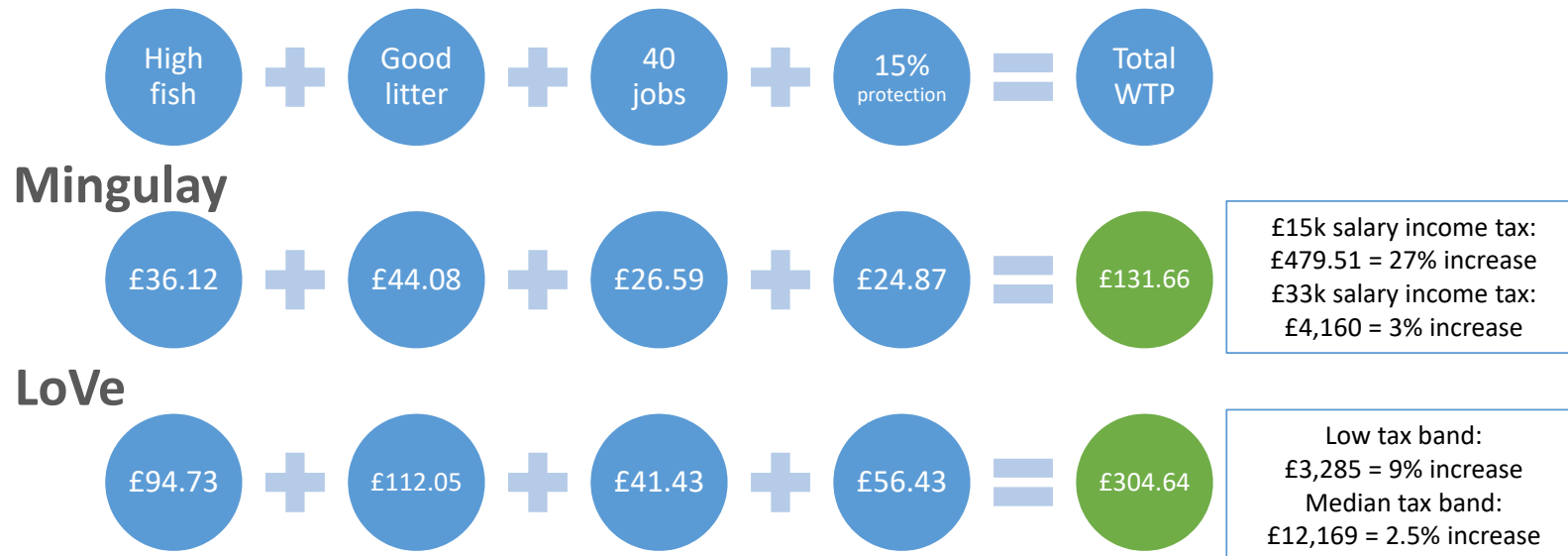




## Management Implications

Strong support amongst respondents for paying towards marine protection through a “Marine Fund” (additional income tax)

Total willingness to pay for “best outcome”





## Key conclusions (so far)

1. Respondents have a preference for conservation attributes over jobs generated from blue growth industries
2. Most valued attributes:
  - Health of commercial fish stocks
  - Marine litter
3. Results on protected area size need to be investigated further
4. Similarities between preferences of Scottish and Norwegian respondents



## Next stages – Flemish Cap and Azores

**Azores:** Survey design ongoing (deciding this week!)

### **Flemish Cap:**

First survey in international waters = very exciting for environmental economists → theoretical implications for our field

- UK, Norwegian, North American surveys (maybe Portuguese)
- **Test scale effects on willingness to pay**
- **Can we design a survey that is *incentive compatible* for an unfamiliar good and one that is not managed by our own governments?**



# Thank You!

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Image credit: BGS