



# POLICY ANALYSIS TO REDUCE MICROPLASTICS FROM RESEARCH FACILITIES IN ANTARCTICA

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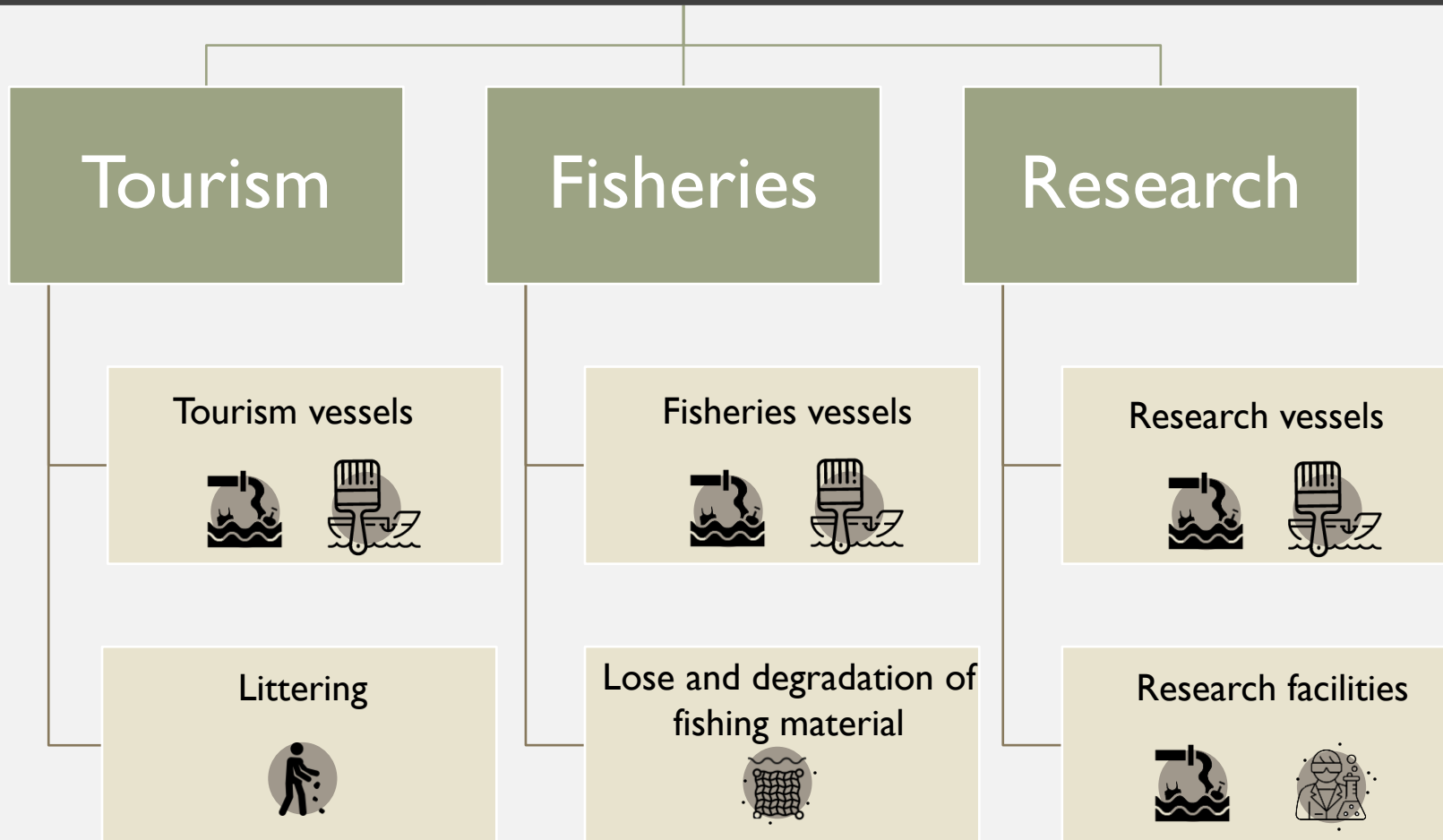


**British  
Antarctic Survey**

NATURAL ENVIRONMENT RESEARCH COUNCIL

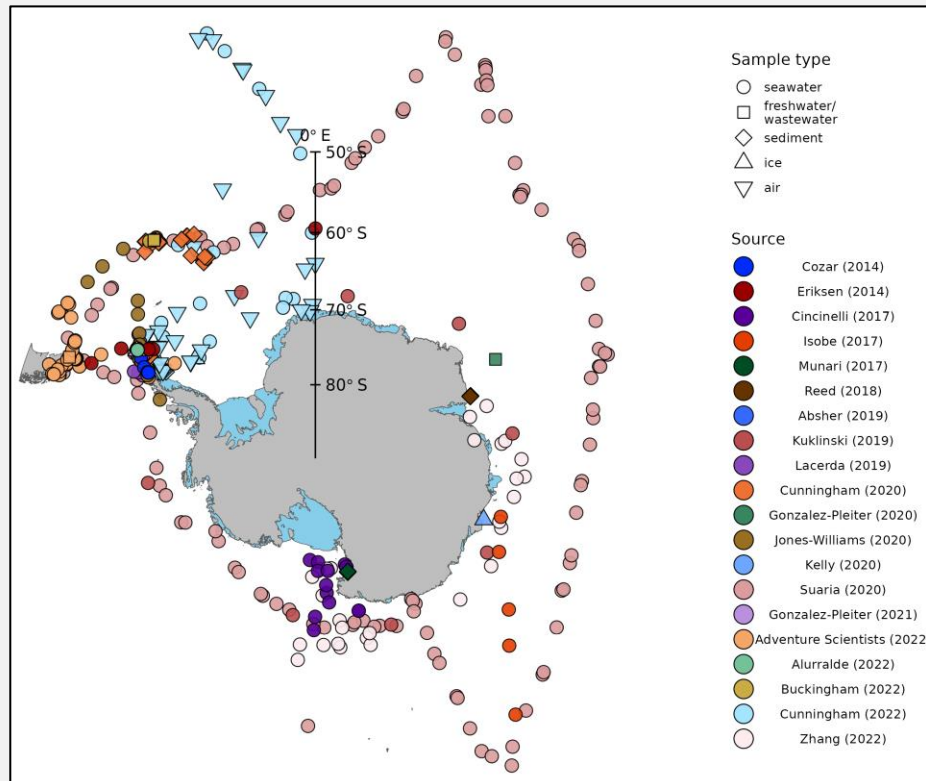


# POTENTIAL MICRO PLASTICS FLOWS IN ANTARCTICA ENVIRONMENT

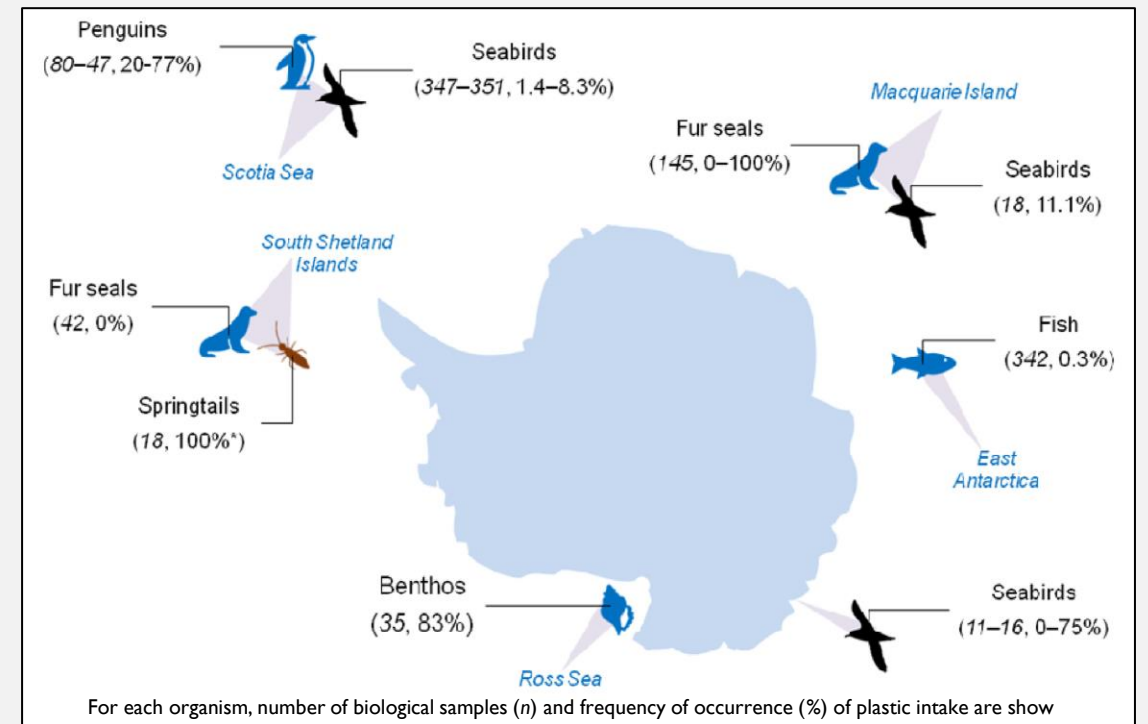


# MICROPLASTICS ABUNDANCE AND IMPACTS ON ANTARCTIC ECOSYSTEM

Numerous sampling and field observations have confirmed the presence of plastic particles in the Antarctic environment and their ingestion by Antarctic biota.



Plastic samples collected between 2010 and 2022;  
Source: Hunter et al., 2024 (in prep)



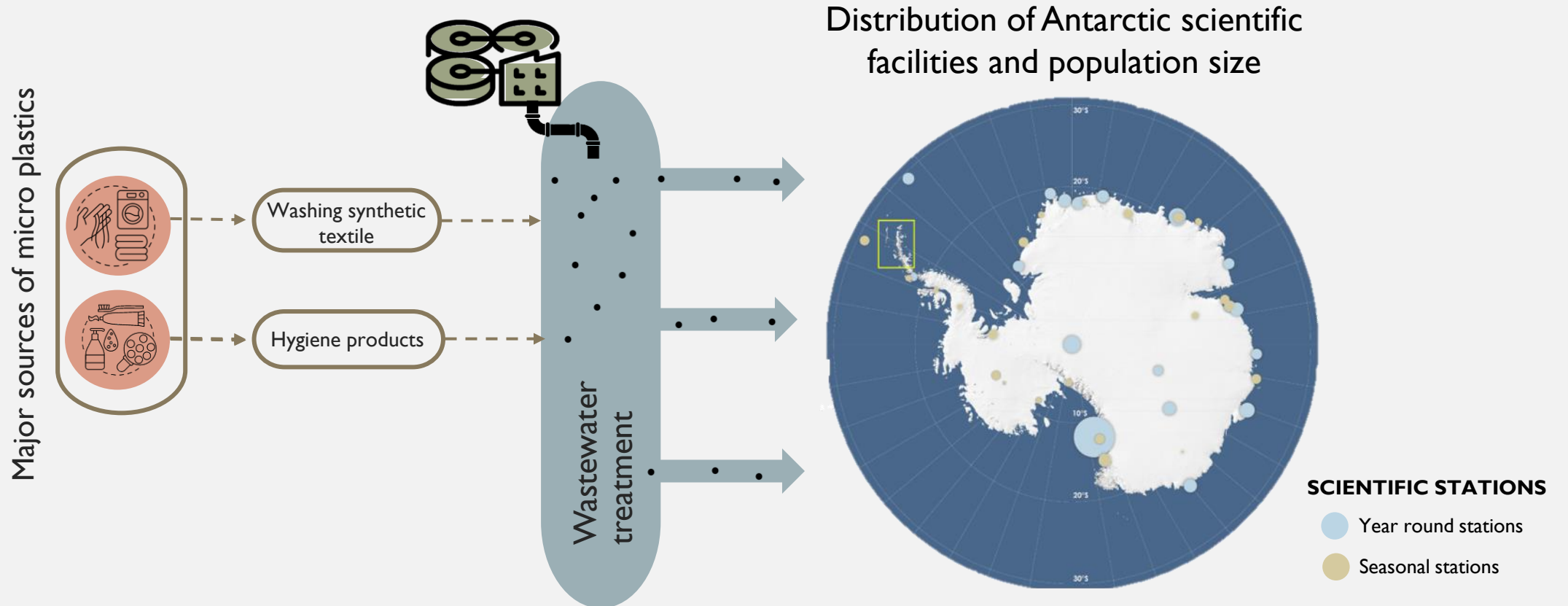
Distribution of field observations of plastic litter intake by Antarctic biota;  
Source: Caruso et al., 2022

# RESEARCH QUESTION

How to effectively mitigate microplastics release from wastewater from scientific research facilities in Antarctica.

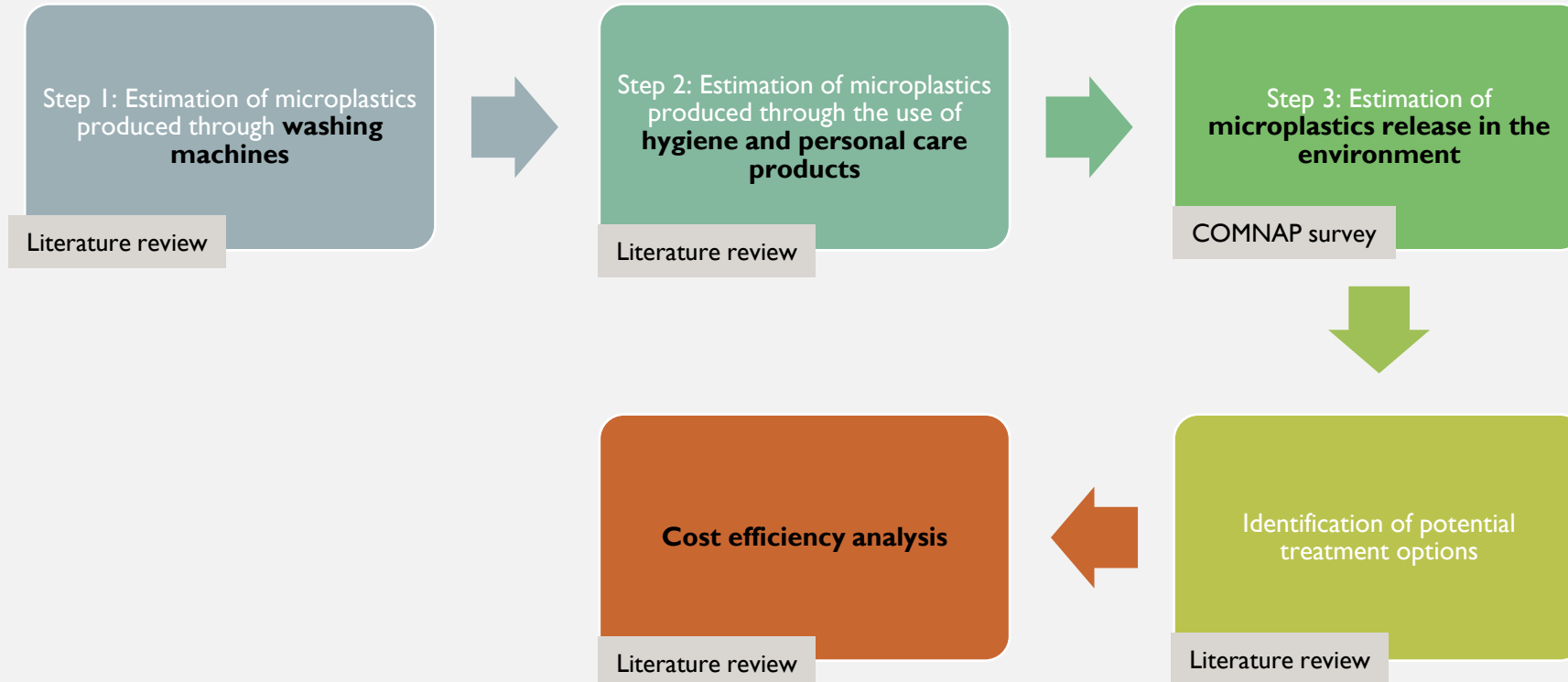
- Quantify the potential release of microplastics from wastewater generated by scientific research stations in Antarctica ecosystem.
- Evaluate and compare various policy options to reduce microplastic pollution in the Antarctic environment.

# MICROPLASTICS RELEASE FROM RESEARCH STATIONS IN ANTARCTICA

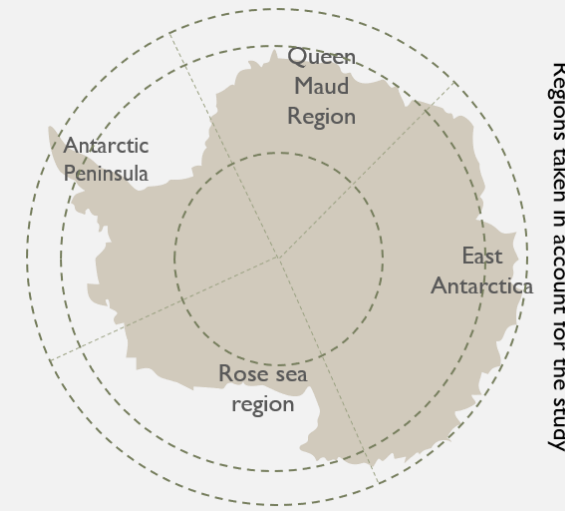


# METHOD

Total amount of microplastic produced from scientific stations

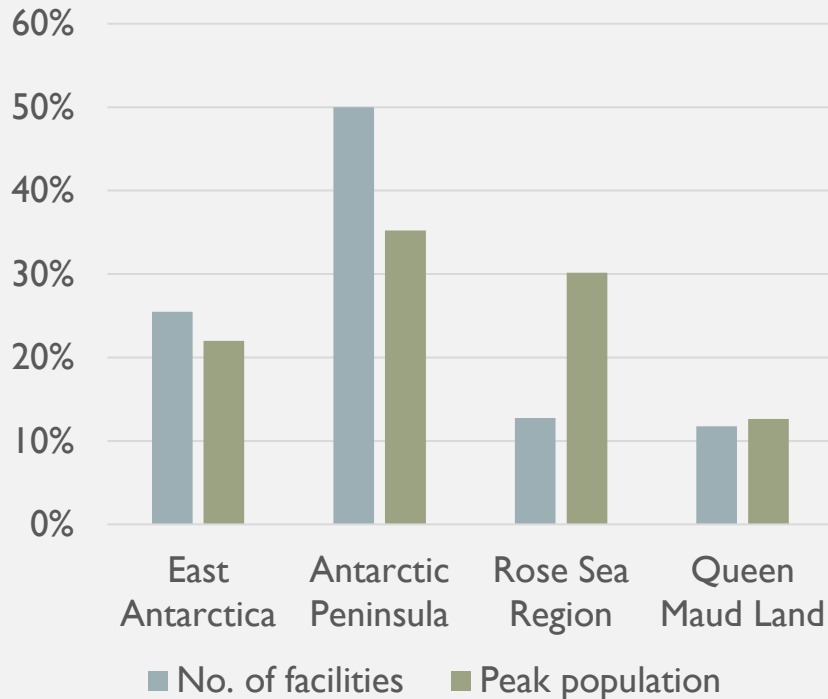


# RESULTS: MICROPLASTIC LEAKAGE

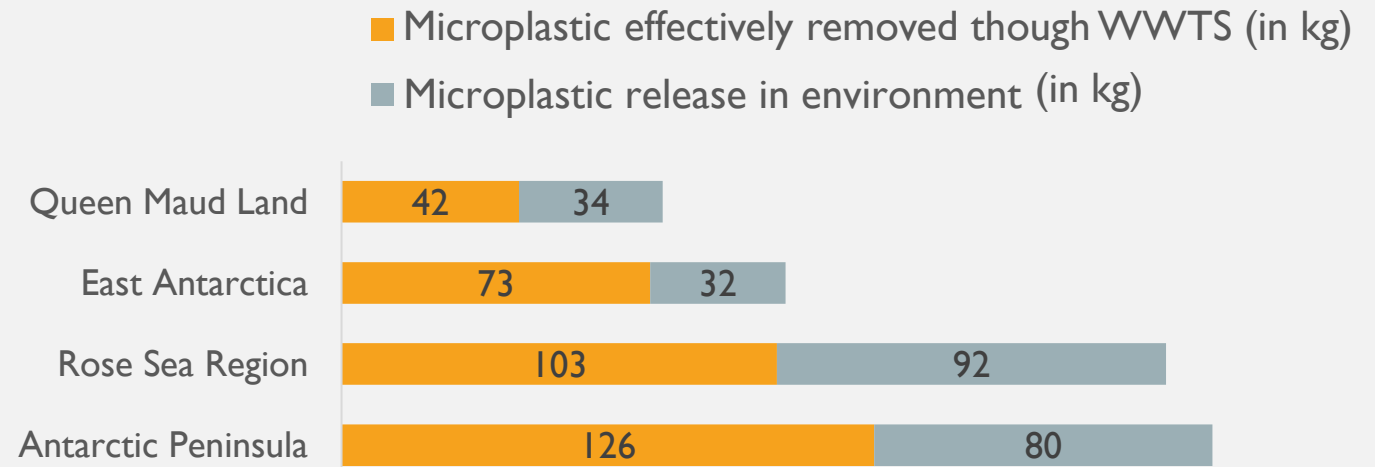


Regions taken in account for the study

Proportion of scientific facilities and population in each region



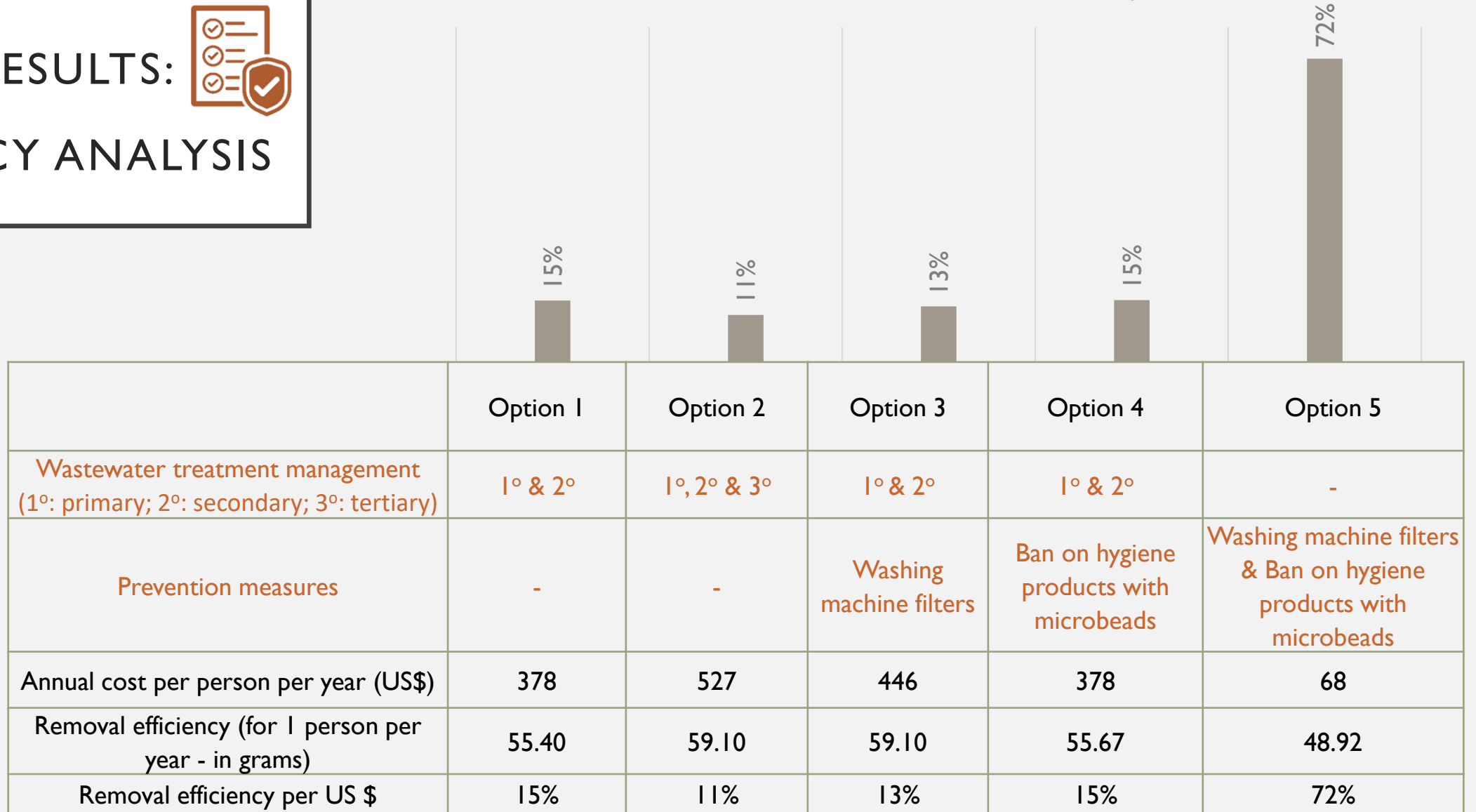
Potential amount of microplastics production from each region



## COST EFFICIENCY PER US \$

RESULTS: 

POLICY ANALYSIS





# CONCLUSION

**Low-cost preventive solutions:** washing machine filters and eco-friendly products

**Long term solution :** WWTS to remove all pollutants from wastewater

Development of methodology to support further analysis

## FURTHER RESEARCH AND SCOPE

1. Conduct comprehensive analyses of microplastic releases from all activities and develop targeted solutions specific to each activity (Postdoctoral Research project)
2. Comparative legal analysis and understanding the challenges of implementation environmental policies in Antarctic system (SCAR Fellowship)

THANK YOU !