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Faculty of Science and Engineering

2022-01-01

## An evaluation of The Seagrass Walk, an immersive living arts piece installed at the National Marine Aquarium, Plymouth, UK. A report funded by the Green Minds project

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Rees, S., Morgan, A., & Parrott, C. (2022) 'An evaluation of The Seagrass Walk, an immersive living arts piece installed at the National Marine Aquarium, Plymouth, UK. A report funded by the Green Minds project', Retrieved from <https://pearl.plymouth.ac.uk/bms-research/344>

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Plymouth, UK.

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September 2022

Suggested citation. Parrott, C., Rees, S.E., Morgan, A .....2022. An evaluation of The Seagrass Walk, an immersive living arts piece installed at the National Marine Aquarium, Plymouth, UK. A report funded by the Green Minds project. Pp21.

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## Abstract

Though the NERC Creative Commissions funding call, a partnership comprising of University of Plymouth (UoP), [Rosie Sherwood](#) (self-employed artist), Ocean Conservation Trust (OCT), and Plymouth City Council: 1) created the Blue Carbon Artist in Residence position, based at the UoP to immerse the artist (Rosie Sherwood) into the activities and knowledge base of the project partners and 2) aimed to connect city residents through an immersive living arts piece (The Seagrass Walk), based at the National Marine Aquarium (NMA), with accessible and highly visible satellite installations around the City. This report is an independent evaluation of how The Seagrass Walk performed against the project Theory of Change, completed through the [Green Minds project](#). Two groups were evaluated 1) The general public as visitors to the National Marine Aquarium in terms of how their experience of the seagrass walk performed against the project's pre-defined General Learning Outcomes (GLO's) based on the proposed TOC (n=180) and 2) the project steering group in terms of a reflection on their experience of working on the project. The results show that all GLOs were positive. Upon asking NMA visitors how the seagrass walk would inspire an environmentally positive behaviour, the most common response from participants was that they would seek to 'eat more sustainably caught fish'. The final art piece was considered by the project steering group to be 'informative and interesting' (UoP Researcher), showing 'a clear appreciation of the space' and 'the video art created is beautiful' (Head of Ocean Advocacy and Engagement at the NMA). 85,000 people have visited the NMA since the opening event, including 2480 schoolchildren. Overall, the group recognise the value of the project partnership between educators, artists, scientists, project managers and curators as an opportunity to share knowledge and create new opportunities for communicating science. Key constructive learning points emerge from the interviews with the steering group including the need to engage early with health and safety representatives to enable the artist to explore potential designs within the limitations of making art for a public space; greater consideration of artist salary; there needs to be a longer time allocation for the design, creation and installation in the project phasing; and finally, that whilst the project partners proposed the evaluation were to be undertaken by a masters student based at UoP, there was no uptake from the 2021/23 cohort and alternative project funds we sought to do the evaluation effectively.

## Introduction

Blue carbon” is carbon that has been sequestered by natural marine processes. Seagrass is recognised by the Intergovernmental Panel on Climate Change for inclusion in national greenhouse gasses (GHGs) inventories as a store for carbon. Through the NERC Creative Commissions funding we 1) created the Blue Carbon Artist in Residence position, based at the UoP to immerse the artist (Rosie Sherwood) into the activities and knowledge base of the project partners and 2) aimed to connect city residents through an immersive living arts piece (The Seagrass Walk), based at the National Marine Aquarium (NMA), with accessible and highly visible satellite installations around the City. See Figure 1 - Theory of Change.

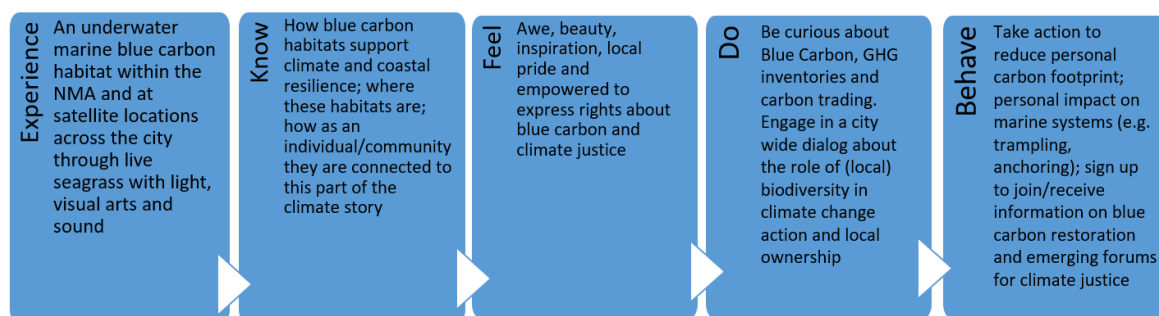


Figure 1 - Theory of Change (ToC)

The project has delivered the following outputs

- **The Seagrass Walk** at the NMA (See Figure 2) a blue carbon inspired art exhibit at the NMA including a redesign of the space, film, photography, graphic design and sculpture. 85,000 people have visited the NMA since the opening event, including 2480 schoolchildren.



Figure 2 – The Seagrass Walk at the NMA

- **The Seagrass Walk opening event** (70 registered attendees) including a private viewing and networking. Speakers and topics: blue carbon ecology by Professor Martin Attrill, carbon and the political landscape by Luke Pollard MP, and the project and the arts residency by Rosie Sherwood.
- **Devils Point/Blossom Together** – Devils Point in Plymouth is part of the National Trust redevelopment project Blossom Together. A sculptural piece made from recycled ocean plastic and inspired by the colours of seagrass is being developed.
- **The Box** – Ocean workshops (OCT) and collagraph printing workshop (Rosie) inspired by seagrass inhabitants for families (625 adults, 780 children across all Box ‘blue’ events)
- **The Climate Hub** – (440 visitors July-September). A community climate hub in central Plymouth hosted a sculpture from The Seagrass Walk as part of their climate art installations. This included a public talk with Rosie Sherwood and Camilla Brendon (Kelp Forest installation).
- **Sea in the Park** events (OCT) approximately 900 people attended events in local parks across the city.
- **Outreach** - Speak up for the Blue: [Blue Carbon through Ocean Art](#); The Sustainiacs: [Rosie Sherwood and the Climate Change Superhero](#); The Saltwater Songlines: [The Seagrass Walk with Rosie Sherwood](#)

## Aim

This evaluation of the NERC Creative Commissions project has two aims:

1. To evaluate the general public’s response to the seagrass walk in terms of performance against the TOC and the defined General Learning Objectives (GLOs).
2. To evaluate the project partnership in terms of reflections on the experience of being art of the Creative Commissions Project

## Methods

Using a mixed method the evaluation was undertaken in two parts:

1. A short quantitative survey. Comprising of 6 Likert scale questions where respondents to the survey were presented with a sentence which embodied each GLO. Respondents were asked to provide a response on a scale of 1 to 5; where 1

indicated that an individual strongly disagreed and 5 strongly agreed with the statements provided. Follow-up questions asked for the respondent to provide two words which they associated with seagrass (having viewed the exhibition); to respond to a question providing pre-defined answers (including an 'other' option) about 'What will you do to help Seagrass?' and; questions to collect demographic data. The survey was completed by members of the public who visited the NMA and the seagrass walk in September 2022 (Appendix 1). The researcher Miss Parrott provided willing participants with a physical copy of the survey once coming out of The Seagrass Walk space. Participants completed the survey themselves, with the option to have the researcher read out and fill in the form for those who required it.

3. Semi structured interviews undertaken by the researcher Miss Parrott with each member of the partner organisations involved explored individual developments, learning and opinions on the project (Appendix 2)

## Results

### Public survey

180 members of the public undertook the survey. The respondent group comprised of 114 Females, 64 Males, 1 Non-Binary and 3 participants who preferred not to say. Each participant was over the age of 18, with 103 of the 180 being within the 25-44 age bracket.

The results demonstrate (Figure 1) the respondents' positive response to the Likert scale questions. The strongest learning outcome was that "Seagrass is important for our planet" (average score 4.5, n=180). The weakest learning outcome (but still a positive response) was linked to GLO 5 "I am going to explore and learn more about seagrass myself" (average score 3.4, n=180).

The data collected from the Likert scale was analysed against age and gender (Appendix 3). This analysis highlighted that gender did not have an impact on average GLO scoring, only showing slight variances across each of the GLOs. Furthermore, when analysing the impact of age on these GLOs there were only slight differences again. The largest difference was seen with participants over 75 years old who gave higher scores for GLO 5 and 6 ('Explore and learn' and 'Change my behaviour').



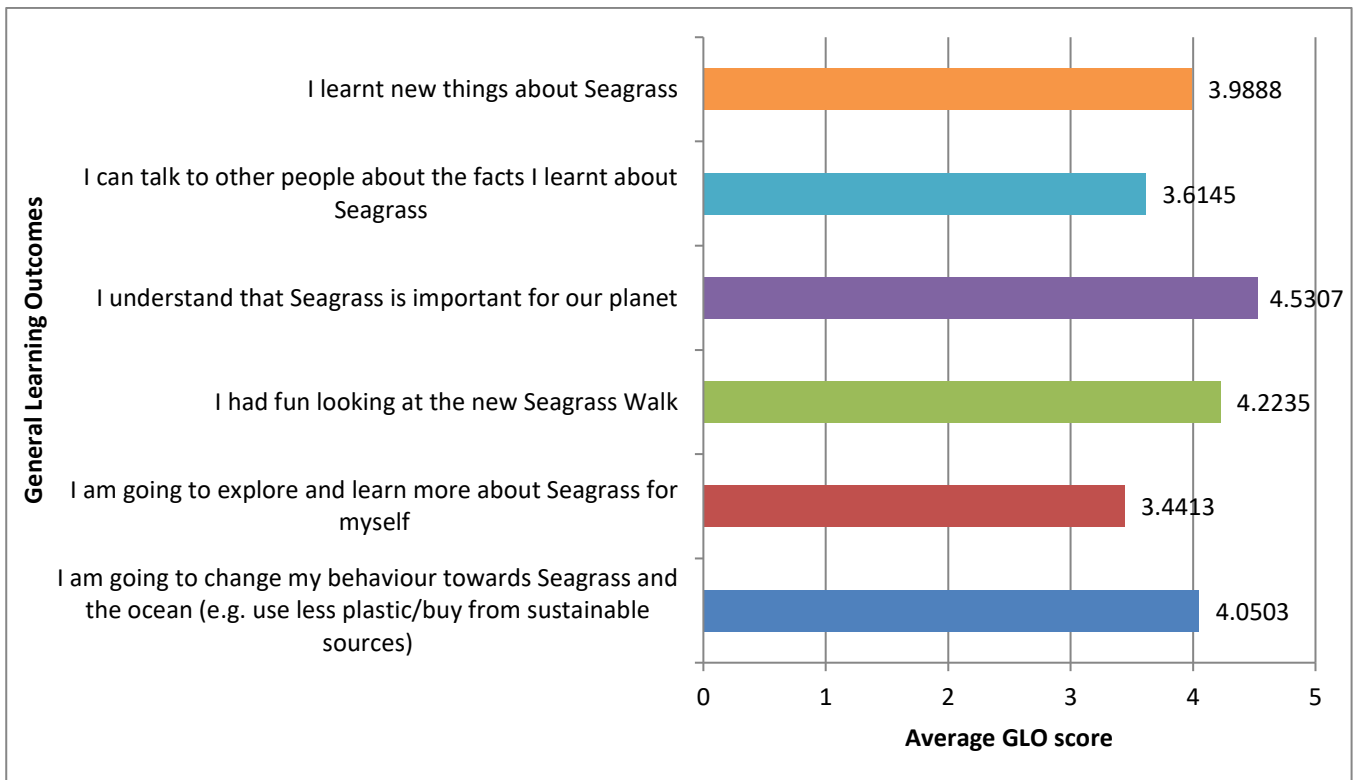
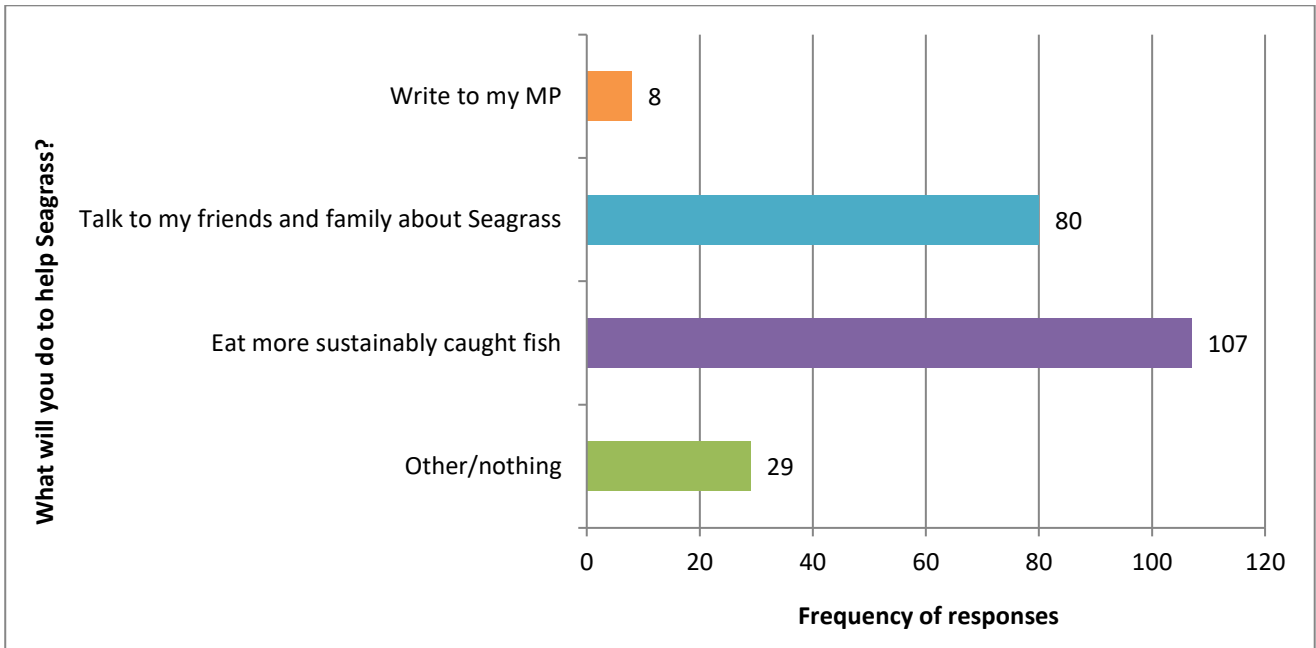


Figure 3: Average self-reported GLO score on a scale of 1-5 where 1=a strong negative response to the GLO question scaled to 5= a strong positive response to the GLO question.

Participants were also asked what two words they thought of upon hearing the word 'Seagrass'. The most common response given (n=17)(Figure 4) was 'important', followed closely by 'Green', 'Grass', 'Ocean' and 'CO<sub>2</sub>'. This complemented the GLO scoring, showing that the key piece of information learnt about seagrass throughout the Seagrass Walk was its importance and thus raising the profile of seagrass in the respondents mindset.





*Figure 5: Frequency of responses relating to the question ‘What will you do to help Seagrass?’*

Finally, there were a total of 56 participants who provided details for a follow-up interviews which could be undertaken by a research at a future date to see is any reported behaviour change is embedded 6 months to a year after seeing The Seagrass Walk.

## Steering group interviews

Several themes emerged from the interviews with the steering group. Overall the response was positive. The interviews highlighted that through the partnership created between educators, artists and aquarium heads and curators, an opportunity was provided to share knowledge between science and the arts. *'Conservation only goes so far when you are focusing on your own disciplines so broadening to the arts can be a big help'* (UoP Researcher and Project Lead). This collaboration allowed for the scientists in the partnership to gain an understanding of the processes involved in creating an art piece, as well as providing the artist with the opportunity to learn about Seagrass and to develop her skills across the art spectrum. Throughout the process the artist in residence was *'keen to understand the science behind Seagrass and Blue Carbon'* (UoP Researcher) and to *'learn about digital art and how to create video art and take videos in a completely new environment'* (Artist in Residence).

Although the final art piece was *'informative and interesting'* (UoP Researcher), the interactive capabilities across the exhibit were less than initial expectations had suggested (UoP Researcher & Head of Ocean Advocacy and Engagement at the NMA). This was due to misconceptions during the planning stage of the initiative in which the health and safety restrictions were not initially recognised. Once complying with these regulations, the space provided was unable to support a physically interactive art piece. The art piece did however meet expectations in terms of its beauty and the living components incorporated. The art showed *'a clear appreciation of the space'* and *'the video art created is beautiful'* (Head of Ocean Advocacy and Engagement at the NMA).

Although there were agreements across the partnership group on the artistic designs created for the space, with the issues caused due to the health and safety aspects of the project, there were a number of changes that had to be made prior to the installation of the art. Members of the steering group reflected that in future projects of this nature, a health and safety officer must be involved at an earlier stage to allow the artist to explore potential designs within the space and structure limitations available.

Some of steering group reflected that the timescale allocated for this project was limited. A number of group members indicated during the interviews that although the project was completed, the design stage took longer than anticipated due to the health and safety

constraints. The installation of the new space was condensed, causing for some of the exhibit to not be included in time for the opening event. In the future, when creating art pieces of this style, in an institution like the NMA, a longer timescale should be allocated for the design, creation and installation of each art piece prior to any opening event.

Additionally, when creating the final art pieces for the new seagrass walk it was evident that the budget for the project had been reached. Therefore not being able to recognise the additional time and effort of the artist or to provide the resources required to complete an evaluation (Uop Researcher and Project Lead). This project assigned a third of the available budget as artist salary. This is still (in the opinion of the UoP project lead) not sufficient. Any future NERC calls of this type should consider ring fencing salary for the artists time, in term of full or part time employment based on a commensurate salary and agreed deliverables.

## **Conclusion**

Overall the seagrass walk as an immersive arts experience has been successful in terms of engaging members of the public in the project's desired learning outcomes. However, despite these results from the general public demonstrating the effectiveness of The Seagrass Walk against the TOC, the authors note that there is a lack of knowledge about the impact/effective on a TOC of the old seagrass exhibit. In future projects it may be beneficial to obtain data on how the public are interacting with the 'old' space prior to installing the 'new' art piece.

Moving forward, the NMA has approximately 280,000 visitors per year, providing a wide potential for impact. In our independent evaluation of the seagrass walk, we included a 'call-back' option for respondents, so there is an opportunity to track if any actions or behavioural changes detailed in the ToC have been long lasting or not.

Key constructive learning points emerge from the interviews with the steering group including the need to engage early with health and safety representatives to enable the artist to explore potential designs within the limitations of making art for a public space; greater consideration of artist salary; there needs to be a longer time allocation for the design, creation and installation in the project phasing; and finally, that whilst the project partners proposed the evaluation were to be undertaken by a masters student based at

UoP, there was no uptake from the 2021/22 cohort and alternative project funds we sought to do the evaluation effectively.

# Appendices

## Appendix 1:

Participant feedback form

Hi, here at the National Marine Aquarium we want to know what you thought of your visit to the seagrass corridor.



Indicate using the faces how much you agree or disagree with the following statements:



I <b>learnt</b> new things about Seagrass					
I can <b>talk</b> to other people about the facts I learnt about Seagrass					
I understand that Seagrass is <b>important</b> for our planet					
I had <b>fun</b> looking at the new Seagrass Walk					
I am going to <b>explore</b> and learn more about Seagrass for myself					
I am going to change my <b>behaviour</b> towards Seagrass and the ocean (e.g. use less plastic/ buy from sustainable sources)					

What two words come to mind when you hear the word 'Seagrass'?

What will you do to help Seagrass?

- Write to my MP    
  Talk to my friends and family about Seagrass    
  Eat more sustainably caught fish    
  Other/ nothing

What is your age?

- 18-24    
  25-44    
  45-64  
 64-75    
  75+

What is your gender?

- Male    
  Female  
 Non-Binary    
  Prefer not to say

What is your ethnicity? (optional)

.....

Would you visit the seagrass corridor again?

- Yes    
  No

Are you willing to provide your contact details for further feedback?

Name:..... Phone number:.....

Email address:.....

## Appendix 2:

### Steering group interview questions

#### Seagrass Walk initiative – steering group structured interview schedule

##### Check - informed consent & happy to record

1. Who are you (name and job role)
2. Before this NERC project what was your experience of working in the cross over between science and the arts
3. What was the motivation to be involved in this project?
4. What was your expectation of this project?
5. To what extent have they been realised?
6. What worked?
7. What didn't work? / How would you fix this?
8. What did you learn?
9. Any other reflections on the project?
10. What do you think lasting the impact of the Seagrass Walk initiative will be on you?



### Appendix 3:

Average GLO scores analysed against age and gender.

Although variances were seen between GLO scores and gender, the responses given followed the same trends. Averages for each gender showed higher scores for GLO3 'I understand that Seagrass is important for our planet' and GLO4 'I had fun looking at the new Seagrass walk' (Figures 6, 7 and 8). This indicated that gender does not have an influence on GLO scoring.

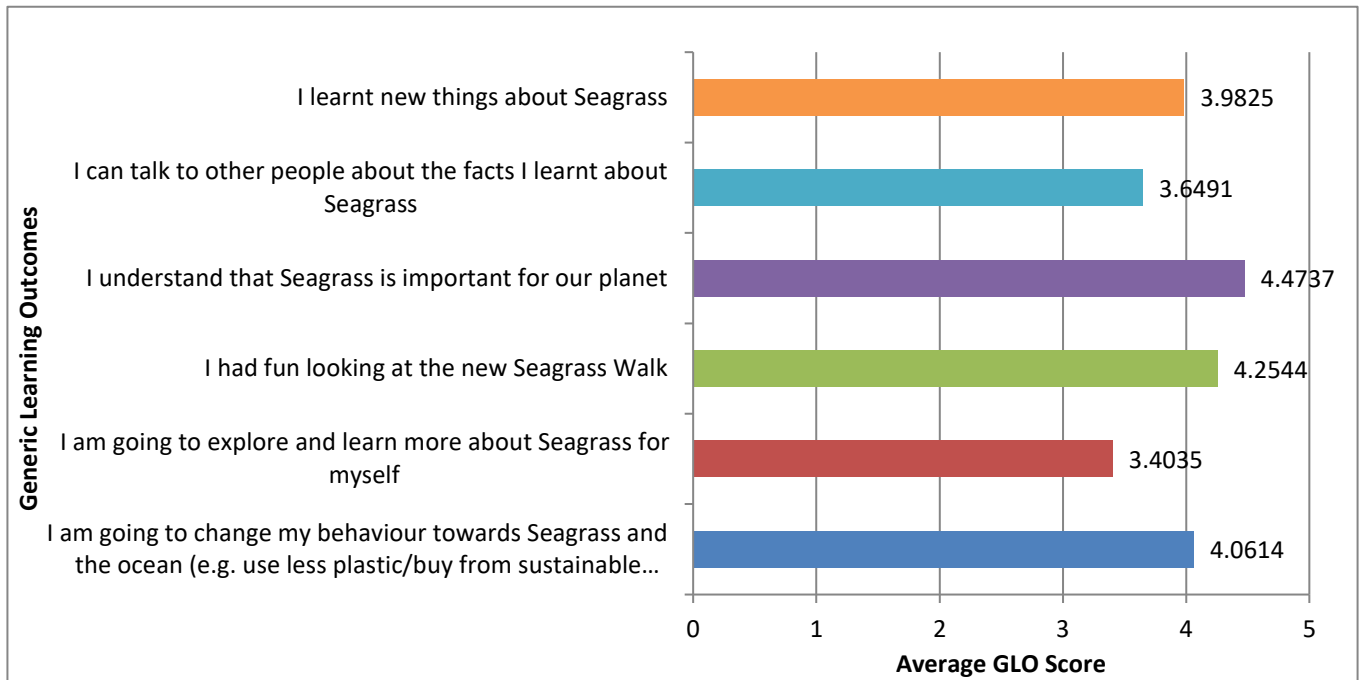


Figure 6: Average GLO scores from the female participants within the study

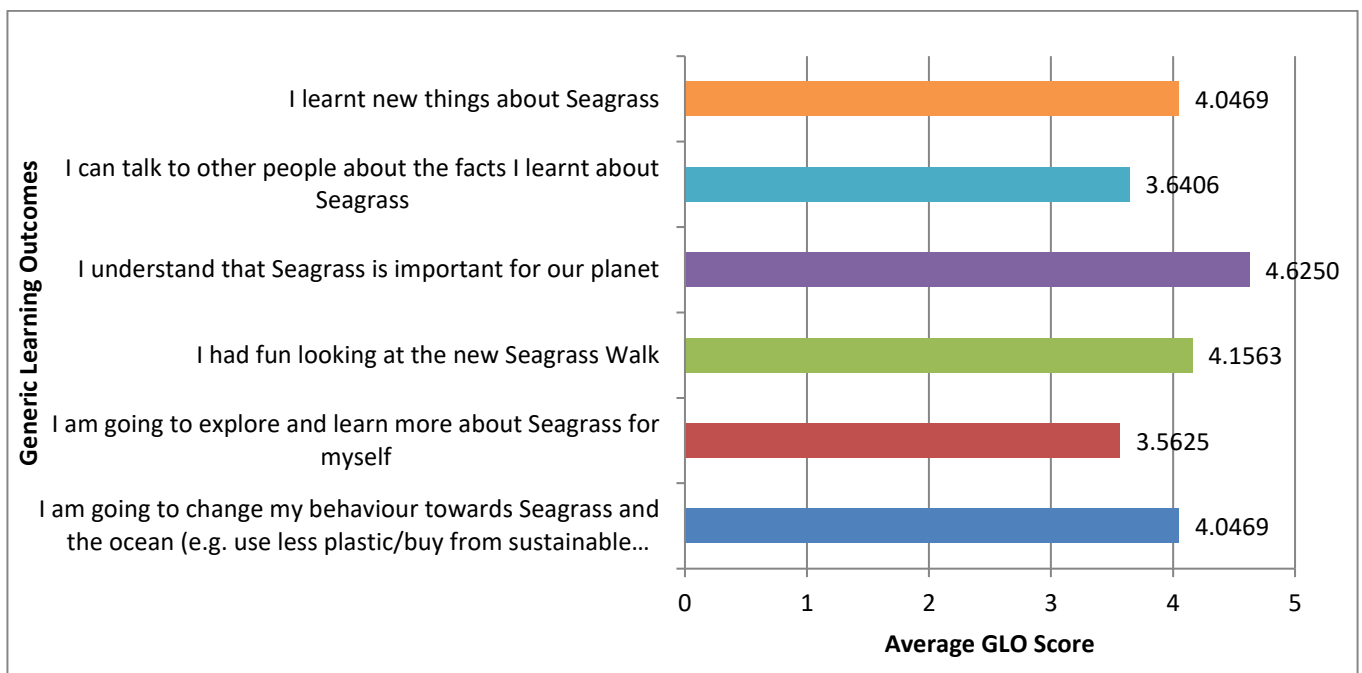


Figure 7: Average GLO scores from the male participants from the study

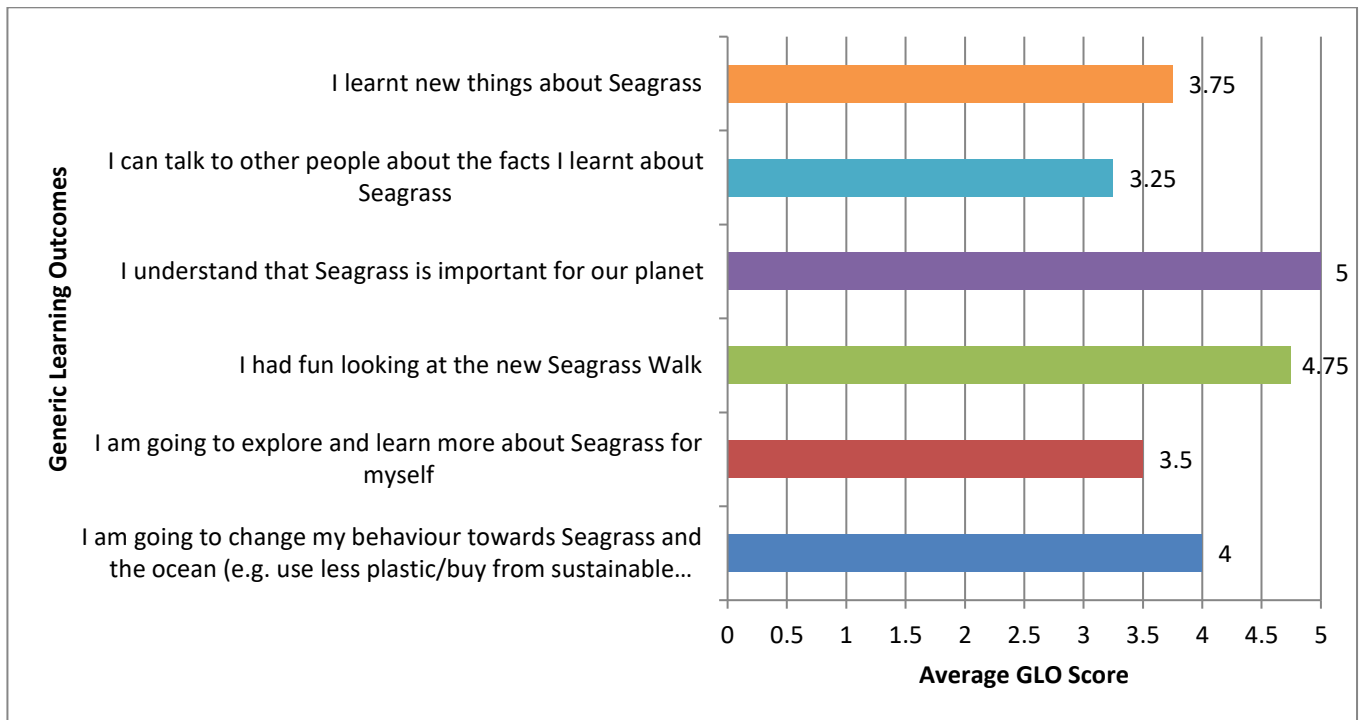


Figure 8: Average GLO scores from the Non-Binary participant and those who preferred not to disclose their gender.

When analysing average GLO scoring against the age categories used, it was noticed that participant scores from the 18-24 age range were consistently lower than each of the other age groups (with the exception of GLO 3 'I understand that seagrass is important for our planet'). In addition, it was also seen that participants above 75 years old gave the highest scores for GLO 5 and 6 ('explore and learn about seagrass more for myself' and 'change my behaviour towards seagrass and the ocean').

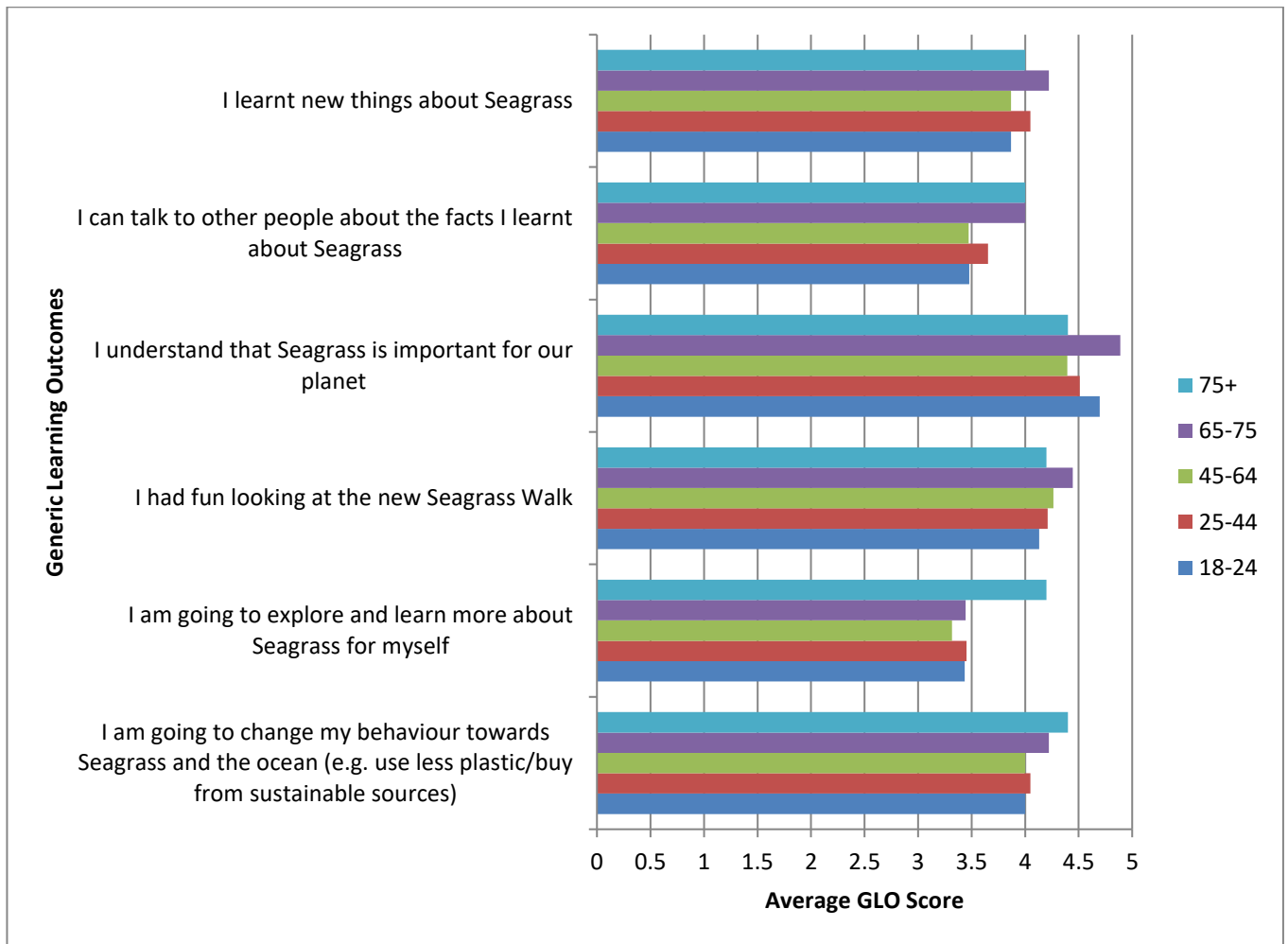


Figure 9: Average GLO scores across each age range

## Appendix 4:

‘What will you do to help seagrass?’ Participant actions towards seagrass analysed against age and gender.

When analysing the responses relating to actions that participants will take to help seagrass, similarities were highlighted between male and female participants. Both group showed a higher interest in eating more sustainably, closely followed by talking about seagrass and the facts that they had learnt. There was a contrast in the data collected from the non-binary and ‘prefer not to say’ participants, however due to a small sample size this does not show any statistical significance.

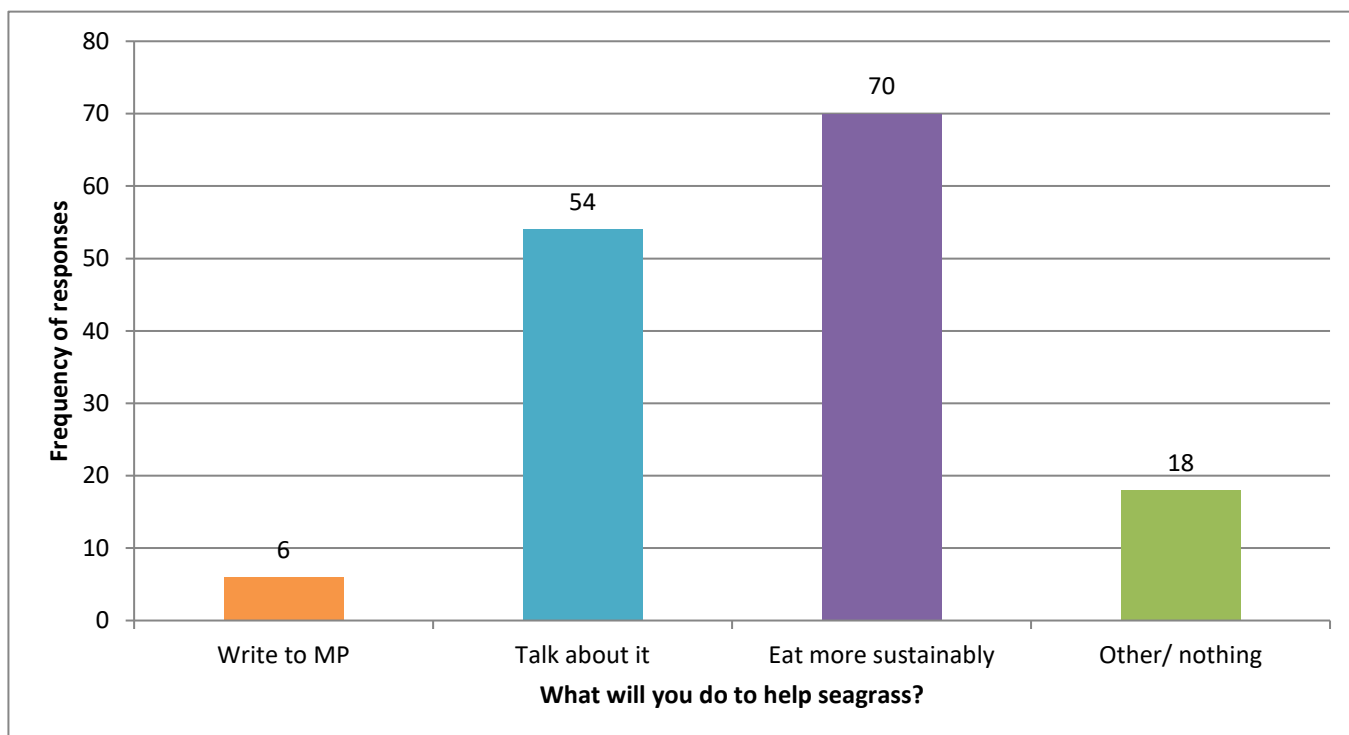


Figure 10: Female responses relating to the question ‘What will you do to help seagrass?’

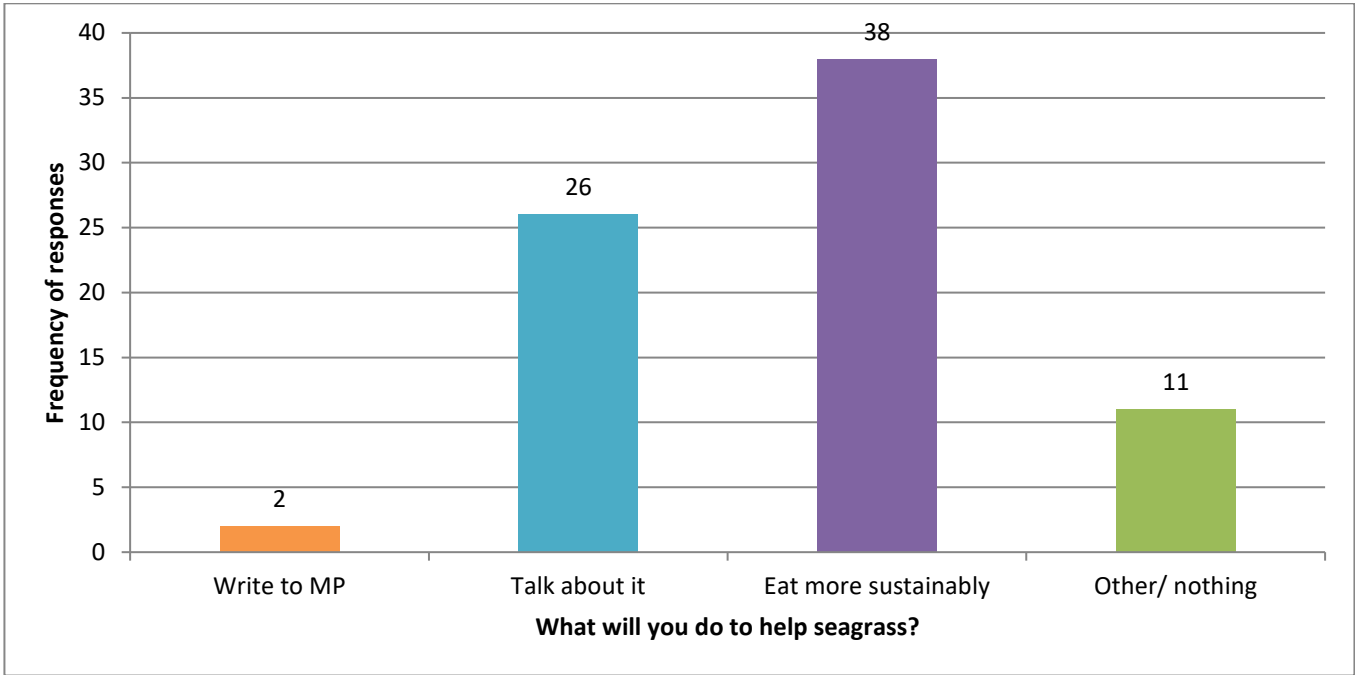


Figure 11: Male responses relating to the question ‘What will you do to help seagrass?’

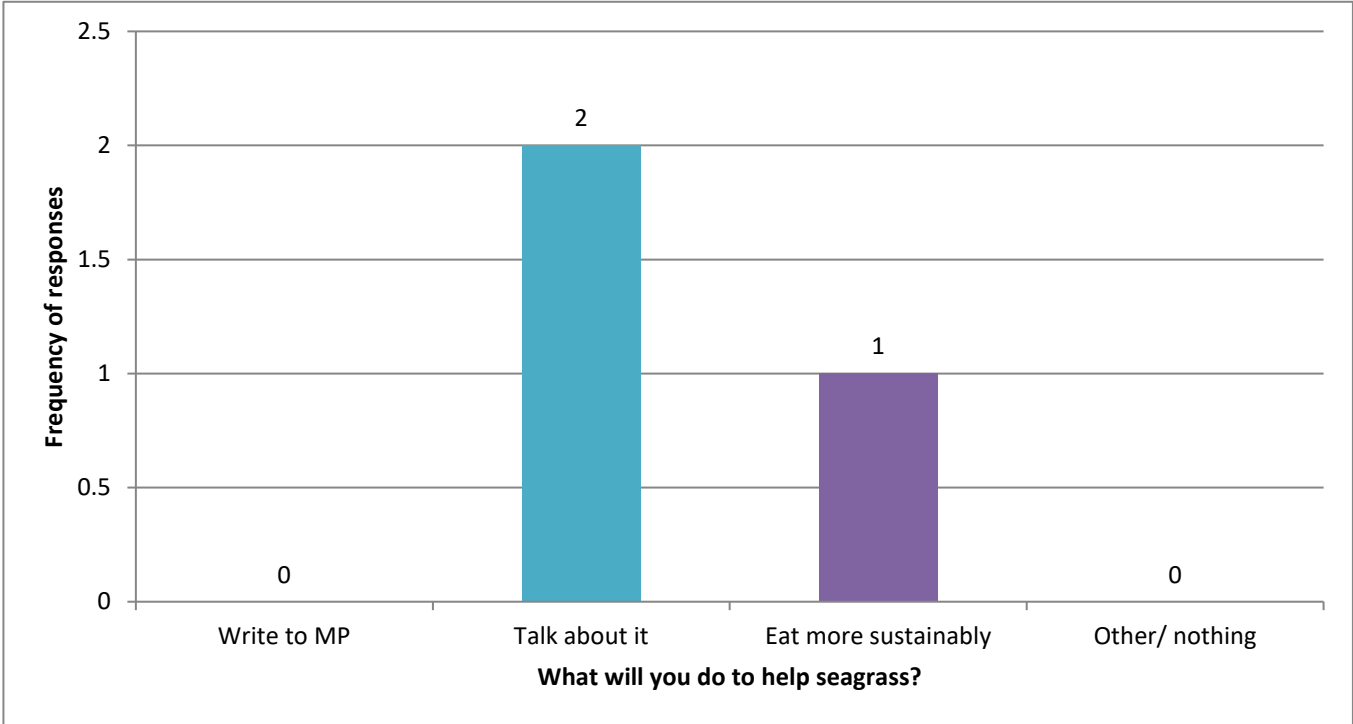


Figure 12: Actions towards seagrass from the Non-Binary participant and those who preferred not to disclose their gender.

The responses for actions towards helping seagrass were analysed against age. In order to determine trends the data was transformed into the percentage of participant responses from each age range. For example, 12 out of 23 participants age 18-24 provided said they would talk about seagrass, therefore being presented as 52% (Figure 13). Throughout all of the age categories, participants were most likely to talk about seagrass and eat more sustainably, with writing to an MP being the least voted option.

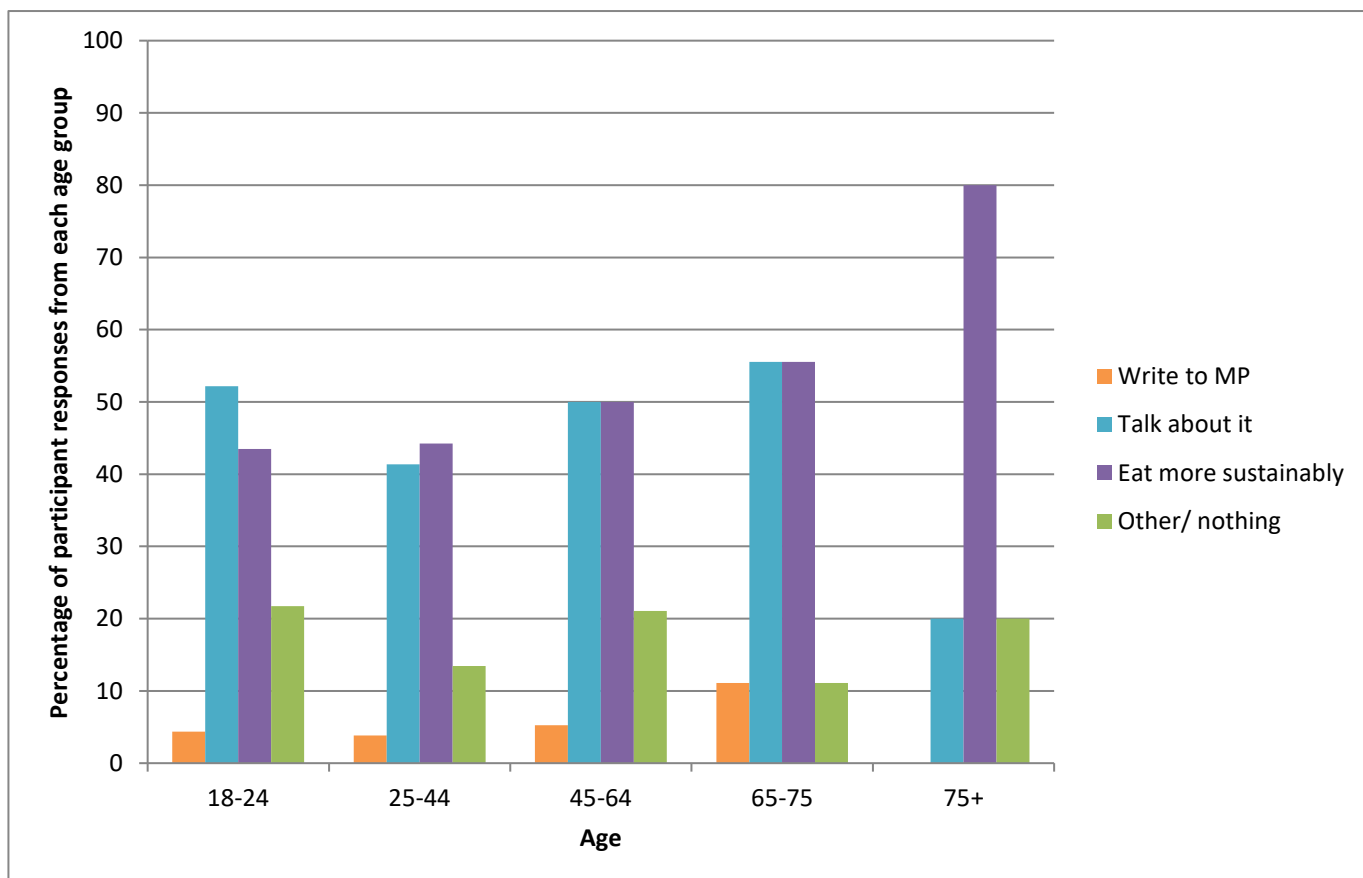


Figure 13: Actions towards seagrass against age.