

9. Since university, Federal, and state agency scientists were seen overall as the most credible sources of information regarding environmental change, NMFS should continue to *use experts as spokespeople* to convey important information.
10. Sectors aligned as very concerned about environmental change, but did not find any information formats “very” useful (no perfect scores), reflecting *need for improving delivery methods* to satisfy interests in this topic. For example, commercial and recreational fishermen, “other” fishing, Tribe and Pacific Islander groups indicated that they are very concerned about environmental change and that specific types of information were “very” useful, but they did not show a strong feeling about the methods of delivery. This finding suggests need to consider mediums recommended by sectors for future use in targeted outreach campaigns.

4.4 Future Survey Considerations

11. NOAA customers align with multiple groups. Providing respondents with the option to select multiple cross-disciplinary responses creates difficulty in identifying sectoral or regional opinions. Additionally, ascertaining whether the respondent is providing their opinion based on livelihood dependency, recreational, or personal interest would be helpful. Future coastal community surveys may want to add the sectoral category of boating-related business.
12. The timing of the survey may affect responses if distributed amongst many other surveys or if during a time of peak public interest.
13. Question phrasing is influential. Questions may need to be repeated in different surveys to confirm conclusions or be specific to reflect desired output.
14. The low number of responses from stakeholders that identified themselves as tribes, Pacific Islander, native Hawaiian, or native Alaskan, or those from the Caribbean indicates our survey did not reach this group well. Overall these groups indicated a high level of concern, yet despite our comprehensive survey distribution, the working group was not successful in engaging them in meaningful numbers. Lack of access to internet and translated versions into other languages were likely barriers for certain groups. NOAA should be aware that outreach strategies may miss these groups, and of the limitations of this study in understanding their needs with particular focus on carefully considering challenges of disseminating information to remote communities and language barriers.

5. Recommendations

Based on the key findings highlighted above, the Task 5 subgroup recommends the following actions for consideration during the implementation of the NOAA Fisheries Climate Science Strategy and other relevant communications:

- NMFS should review the results of this survey in detail to identify specific priorities and gaps in communications by sector and region.
- Once identified, these specific needs and hypothesized conclusions should be verified by additional targeted surveys or user-accessible data collection efforts. The preferred outreach and delivery strategies of stakeholder and customers should be used to increase participation amongst sectors and increase credibility of post-survey analysis.
- Using findings from survey efforts, NMFS should measure and track the effectiveness of communications considerate of multiple levels of understanding of information and the diversity of purpose and sector. NMFS should also integrate relevant strategies in tool development.