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## **Place-based film for growing community engagement in local marine conservation**

Awareness, knowledge and community identity can grow from local narratives about conservation and enhance our capacity for environmental stewardship. New media narrative approaches are also seeking to improve the terms of community engagement across a spectrum of stakeholders. For instance, film is increasingly being used by scientists and policymakers to situate science stories within a community in order to increase local ownership and enhance engagement, be it through active participation in conservation or to support/social license. Here, the use of place-based documentary film as a tool to affect these outcomes is explored in a community adjacent to a controversial marine reserve, and we focus in particular on the effect of film on local youth.

### INTRODUCTION

Recently there has been a sea change in our willingness to delineate marine protected areas (MPAs); they have increased markedly in Australasia, as around the world. However, despite their proliferation, large numbers of MPAs are failing to meet their objectives for marine conservation.<sup>1</sup> Their long-term effectiveness (for biodiversity preservation, fisheries management and/or non-extractive recreational uses) relies on a complex mix of planning, development, monitoring and enforcement<sup>2</sup>, as well as the cooperation of local stakeholders.<sup>3</sup> Failing to engage such stakeholders (e.g. commercial and recreational fishers or members of the wider community) has been shown to compromise the efficacy of MPAs through both biotic and economic effects of non-compliance and enforcement.<sup>4, 5, 6</sup> Understanding, incorporating and broadening stakeholder perceptions through community engagement is of no small importance for effective conservation through MPAs.

New media approaches including social media, digital platforms and film are seeking to improve the terms of public access to information and civic engagement. In the last decade, the use of film as a medium for factual storytelling to increase awareness in environmental and social issues has increased rapidly.<sup>7</sup> Policy-makers and scientists have been advised to use film to situate science stories within a community in order to increase local ownership and identity, which may enhance participation in conservation and social license to operate.<sup>8</sup>

Although significant attention has focused on the efficacy of different approaches for community engagement around biotechnology and climate change<sup>9,10</sup>, relatively little has focused on marine conservation<sup>11</sup>; it remains challenging for marine managers to know how to best involve stakeholders at the community level. A first step in the process of local science and society engagement around an MPA is arguably increasing public awareness of the marine habitat, its users and the environmental pressures it is experiencing.<sup>12</sup> This could be achieved, at least in part, through place-based narrative explored in a documentary film that includes multiple stakeholder perspectives. Here we report on a pilot study to assess preliminary effects of a short documentary film on public awareness about an MPA: its issues, uses and the science behind its marine management policy.

## STUDY SITE

In 1991, the Solitary Islands marine environment was protected as a marine reserve, the first of its kind in New South Wales (NSW), Australia. It was managed as a marine reserve before being changed to a multiple-use marine park in 1998 and named the Solitary Islands Marine Park (SIMP). Although there was significant community consultation, many stakeholders including members of the local community were resistant to the revised zoning scheme.<sup>13</sup> However, over time, the marine park gained acceptance and eventually some popularity in the community. In 2008, acknowledging that an understanding of issues leads to local support and, in particular, compliance with regulations, the NSW Marine Parks Authority undertook surveys within the community to gauge their knowledge of and support for the SIMP. The results indicated that there was good awareness of the SIMP among residents and that many were in favour of it.<sup>14</sup> However, a contemporary assessment of public perceptions about MPAs across NSW revealed a very narrow understanding of their function.<sup>15</sup> The majority thought they were primarily about fisheries management (rather than a multipurpose tool that is also for conserving biodiversity) and that water quality was the determining factor of a healthy marine environment (rather than use of MPAs as a conservation tool, and their broader ecosystem effects for anything other than fisheries management). In 2011, a new zoning plan increased the size of the SIMP sanctuary zones from 12 to 20%, and this was contested by many stakeholders.<sup>16</sup> As lack of support may in part be linked with a lack of understanding about the use of MPAs as a biodiversity conservation tool, we considered that the SIMP and its surrounding community provided a good site to examine the effect of place-based film for increasing public understanding of the impact of MPAs.

## FILM PRODUCTION

A 25-minute documentary film, *Bluewater*, was made about the SIMP, including in its content aspects of management, biodiversity, recreational use and the socio-economics of local fisheries (available to view online: <http://vimeo.com/56794630>). The main narrative arc employed an entertaining storyline of a recreational spearfisher as he attempted to win the Bluewater Classic, a spearfishing event occurring annually in the SIMP. As the narrative of the Classic developed, the audience was informed about the findings of a 2012 audit of MPAs in NSW, including the SIMP, which called for a reorganization of legislative and administrative structuring in order to better meet objectives for conserving marine biodiversity.<sup>17</sup> A diversity of locally-known stakeholders voiced their opinions on-camera about how changes in the SIMP had affected them in the past, and how they felt about proposed future changes. Marine scientists and managers involved in the

SIMP explained on-camera the need for conservation and how a management tool like an MPA can conserve biodiversity. In this way, the film aimed to explore socio-economic and environmental implications of the proposed policy changes to the SIMP in a way that inspired local identification and raised awareness and knowledge in an entertaining format.

## STAKEHOLDER FEEDBACK, INCLUDING LOCAL YOUTH PERSPECTIVE

Feedback was requested from stakeholders interviewed in the making of *Bluewater*. A link to the film was shared and they were invited to watch it and then answer several questions by email. These included whether the film affected their view of local marine conservation, their knowledge of marine science and conservation management, their awareness of different stakeholder viewpoints, as well as what they thought the film did or didn't do successfully and how the wider community might respond to it.

Youth are often omitted from stakeholder consultation (although this may be changing in cases of particularly overt multi-generational environmental crises, like climate change). We gauged the effectiveness of the film in raising wider public awareness in youth by supporting a social science teacher at a local high school to incorporate the film in their curriculum in 'Human Society and its Environment'. The school is situated close enough to the SIMP that students are allowed to walk to beaches within the park for 'sporting activity'. The teacher surveyed students before and after viewing *Bluewater*, using open-answer questions that we had suggested for assessing knowledge about the SIMP and perspectives on its value (Figure 1). Anonymised responses from 89 students, aged 14-16 years old, were shared by the teacher. These we coded and grouped into emergent themes (where a single response might be coded under multiple themes) for basic quantitative analysis.

## RESULTS

A commercial fisherman, a recreational spear fisherman, and the manager of the SIMP responded to our request from participant (adult) stakeholders. Most felt that the film was entertaining to watch, but their opinions on its value for representing stakeholder opinions differed. The commercial fisherman believed it gave the wider community "*a different perspective of the user groups within the marine park and the issues they face*", and the recreational fisher noted greater personal appreciation for the "*tenuous and challenging*" position of commercial fishermen. However, the park manager felt the film fell short of comprehensively representing stakeholders in that it omitted the surfing community. However, they noted surprise at learning about some of the beliefs held about the impact of new policy on the spearfishing competition, which indicates the film broadly succeeded in communicating different stakeholder perceptions about policy implications. The recreational fisherman felt that the film gave a particularly balanced view of both recreational and commercial fishing as well as conservation, and that was important because they didn't believe the general public understood the value of the SIMP to certain stakeholders like free-divers. They also found that the film increased their aesthetic appreciation of the marine environment: "*I was amazed by how beautiful the environment was, even though I spend a great deal of time spearfishing in it. I have a renewed joy and wonder of being under water.*"

<b>Question</b>	<b>Response themes and coding frequency (%)</b>
Pre: What is the purpose of the SIMP?	Conservation (77) Don't know (9) Education/Engaging public (8) Manage Fishing (6)
Pre: What types of people use the Solitary Islands Marine Park?	Tourists/Marine Enthusiasts (49) Scientists (44) Recreational Fishers (32) Spearfishers (9) Rangers/Park (8) Commercial Fishers (1) Don't know (1)
Post: Did you like the film?	Yes (94) No (6)
Post: Before watching the film did you know about the Solitary Islands Marine Park?	Yes (68) No (32)
Post: Do you think the Solitary Islands Marine Park is or could be important to your local community? If yes, how?	Yes (94) No (6)  Conservation (36) Fishing (15) Provide jobs (15) Tourism/Recreation (13) Education (10) Don't know (6) Charity (3)
Post: How did the film make you feel about people in the community and their use of the Marine Park?	Overall Good (51) Mixed emotions (16) Overall bad (10) No feeling (7) Don't know (4)

Figure 1. Table of student responses to questions pre- and post-viewing the film Bluewater. Themes are arranged in order of dominance according to frequency of coding events (%) from 89 student responses each, pre- and post-viewing.

Some participant stakeholders felt their existing familiarity with the issues meant they gained little new understanding about conservation science from the film, although the recreational fisher noted that it did help “*crystallize my concern*” about tensions between conservation and extractive uses. The park manager perceived the film’s marine science content to be “*a secondary objective*” (noting a few technical inaccuracies in how policy was presented and limited coverage of wider issues facing marine parks) but observed that from a production point of view the drama and storyline were effective for appealing to the public.

Even with the school in such close proximity, a large number of the students (32%) reported they were not aware of the SIMP before viewing the film. Of those that had been aware, most thought its purpose was for conservation (77%), while only a few noted its role in public education/engagement or in managing fishing (8% and 6%, respectively; Figure 1). Before viewing, students generally associated three users with the SIMP, including tourists/marine enthusiasts, scientists and recreational fishers (49%, 44% and 32%, respectively).

Most students (94%) enjoyed the film and demonstrated a greater awareness of the SIMP’s multiple purposes after watching it. In addition to noting its role in conservation, its importance for fishing, providing jobs and tourism/recreation and education were also noted as important (indicated by 10-15%). As one student described, its conservation goals are “*pretty important, but people still need to be able to use it and should be able to catch [fish].*” After watching the film, most students (94%) also perceived that the SIMP was or could be important to their community, with 51% indicating they had a positive feeling towards community use of the SIMP. For example, one noted the film “*informed me because I didn’t know how many people relied on the marine park to make a living*”. Another observed it made “*me feel special that we live on such amazing coastline with such a high biodiversity*”, a sentiment echoed by a further student inspired to say: “*hope in the future I can help out.*”

However, 10% of the students expressed negative feelings towards some uses of the SIMP, citing reasons like: “*I think that people need to cut down on fishing*”, and “*people in the community are using the marine park for the wrong things*”. Answers given by approximately 16% indicated mixed emotions about the balance between conservation and use, e.g. “*I love the science of the parks, but the fishing is also a major industry for the local community.*” Similarly, another declared they were “*sad that people lose their jobs and that a sport could be ruined. But also, happy that species won’t be destroyed but protected.*”

## DISCUSSION

Watching the place-based film, *Bluewater*, did appear to increase appreciation of the SIMP’s diverse local users and its biodiversity. Both participating stakeholders and local students noted they enjoyed the local story-based narrative and found the film entertaining. Responses also suggested that the film was successful in increasing awareness of the conservation value of the SIMP. Although stakeholders already engaged with the SIMP generally did not find that the film furthered their understanding of marine science and policy issues associated with the proposed changes to legislation, it appears to have been appropriately pitched for education to younger viewers. Indeed, the film was particularly well received by a secondary school teacher who recognised the value of its information and perspective and indicated that they would incorporate the film into their future society-environment teaching.

Limitations to its educational scope were imposed by the narrative constraints of popular documentary genera, where filmmakers follow human-interest story imperatives in order to hold audience attention.<sup>18</sup> The balance between story and depth of facts requires active negotiation and remains a tension for films seeking to reach a range of audiences. The requirements of story can force scientific explanations to become secondary goals, where the amount and complexity of educational content is constrained by drama and plot-pacing elements. This can be seen in *Bluewater's* plot focus on a specialized group of recreational fishers (the spearfishers), and it is exacerbated by the time constraints of a short-form documentary, which resulted in less coverage of legislation and wider marine park policy. The effect of a story-based narrative may lead to a film being interpreted as partisan or even polemic in its perspective, restricting its use for broader engagement purposes. *Bluewater* seems to have escaped this pitfall, for although it was noted that not all stakeholders were represented, both participating stakeholder and student audiences thought the film helped raise awareness about the MPA and multi-use stakeholder involvement.

For an MPA to be effective in marine conservation, its management regulations must be supported by its stakeholder community. This occurs not only through co-creation, such as having stakeholder perspectives feed into the management aims and effectiveness indicators<sup>19</sup>, but also through public understanding of why management practices are beneficial for a specific area. To facilitate this, new approaches for opening up communication with stakeholders are being developed to guide managers in assessing the effectiveness of an MPA in reaching its key objectives including how well it is received by stakeholders.<sup>20</sup>

Addressing changing requirements for public engagement, science communication strategies have shifted from deficit, to dialogue, to participatory models.<sup>21</sup> Linked with community-focused dialogue platforms and educational programs, place-based film that shares multiple stakeholder perspectives, holds potential for priming such engagement by actively involving the public in a local narrative around use and stewardship. Films like *Bluewater* can, supplemented with educational brochures and information packs, provide viewers with more in-depth facts about marine ecosystem processes and management techniques as well as socioeconomics and cultural value. They can be linked with online dialogue and local knowledge sharing platforms, as has proven successful in other marine conservation strategies globally.<sup>22, 23</sup> Ultimately, the methods of community engagement in MPAs may need to be as dynamic and diverse as the marine ecosystems they are protecting.

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