



I need a shift to more pro-environmental behaviours

Managers are often faced with challenges arising from people's action or inaction impacting the marine estate. For example, how to encourage people to start, stop, recommence, or continue fishing in a particular zone or for a size/species of fish; slowing boats down due to dugong breeding; or taking responsibility for rubbish in and around waterways.

In this factsheet, we discuss how behavioural interventions can support managers' goals in the marine estate.



What are Behaviour Change Interventions?

A suite of tools are available for management use (Figure 1), in isolation or combination, to alter and leverage the actions of individuals or groups towards a desired new state of being, via education, persuasion, incentivisation, coercion, training, environmental restructuring and modelling typologies.

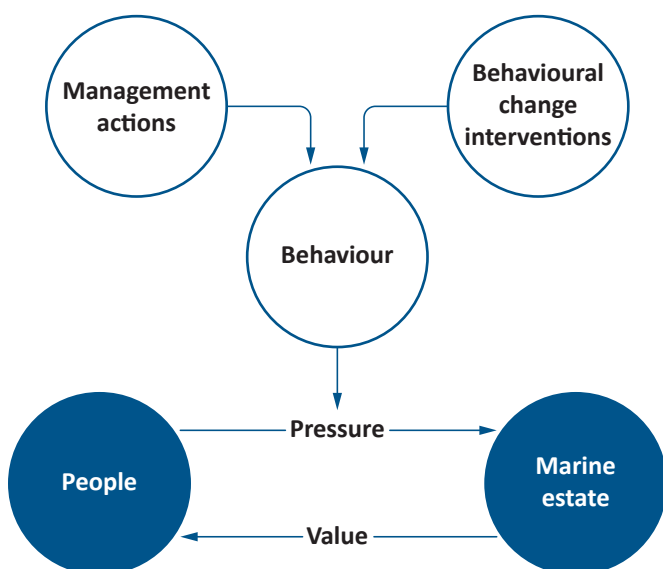


Figure 1: The marine management system.

How to implement successful Behaviour Change Interventions?

Identifying the following steps for behaviour change can maximise the success of your interventions. Depending on the size and complexity of the issue to be addressed, you may consider including a Program Logic or Theory of Change. At a minimum, all behaviour change interventions should contain the 9 key steps in Figure 2.

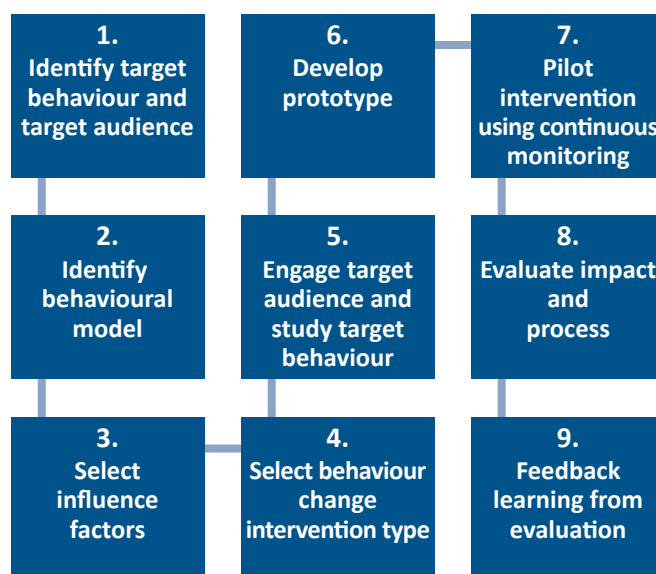


Figure 2: Nine key steps for designing a behaviour change intervention.

Data Needed

Some general data may already be publicly available for your intervention, such as socio-economic demographics (age, gender, population size, education and earnings). However, the majority of the data needed for a behaviour change intervention is specific to (1) the problem identified in the particular place, and (2) the characteristics of the group sought to be targeted by the intervention, needing fresh data collection to suit that purpose.

Behavioural Frameworks

There are many behavioural frameworks available, the majority based on characteristics about people (as individuals, in groups or both) to predict their intentions to act in a certain way, and in turn, their future actions. For example, the Theory of Planned Behaviour (and its variations), uses a number of motivations, norms, perceptions, beliefs and attitudes to predict behaviour and ongoing actions (Figure 3). Understanding individual or specific group motivations and values allows for purposeful design, monitoring and evaluation of behaviour change interventions.

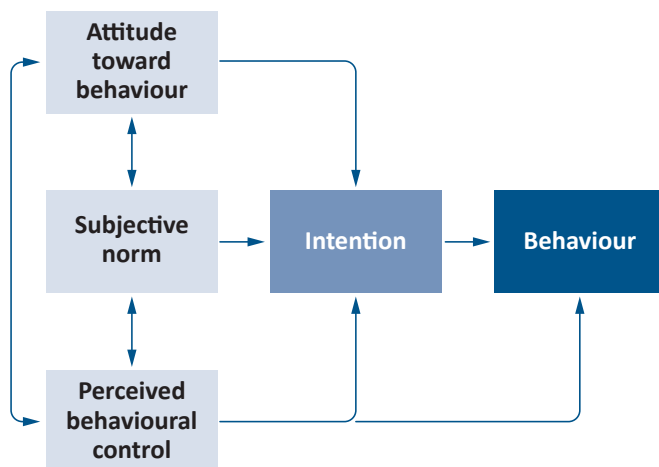


Figure 3. Theory of planning behaviour.
Source: Ajzen & Fishbein (1980).
Understanding attitudes and predicting social behaviour. Englewood Cliffs, NJ: Prentice-Hall.

Nudging

One method of effecting behaviour change is via nudges. First introduced in the book “Nudge” (2008) by Richard Thaler and Cass Sunstein, a nudge intervention happens when the decision context is designed based on behavioural science insights to gently steer people’s behaviour into a certain direction. In terms of implementation, nudges are lighter in touch compared to policies which mandate, prohibit or penalise, and lower in cost compared to price-based tools such as subsidies. Nudge interventions do not remove choice; instead nudges appeal to people’s psychology (e.g. cognitive processes, heuristics, biases) by making it easier and more attractive for people to adopt the recommended behaviour.

Effective nudging requires you to be aware of how people actually behave (as opposed to how you assume they intend to behave as a rational response to traditional policy tools). The gap between actual and intended behaviours can be explained by the dual- process model of cognition. This recognises that people have two modes of processing information: Systems 1 and 2. In their everyday lives, people mostly utilise System 1, saving their limited cognitive abilities of System 2 for more complex tasks. As a result, people are often biased against tasks that require deliberate effort.

Another dimension overlapping with the distinction between Systems 1 and 2 is that of “hot” (emotional) and “cold” (unemotional) cognition. A nudge classification model can be constructed based on these two dimensions. We use nudges to address the biases originating in our System 1. This can be done in various ways displayed in Figure 4

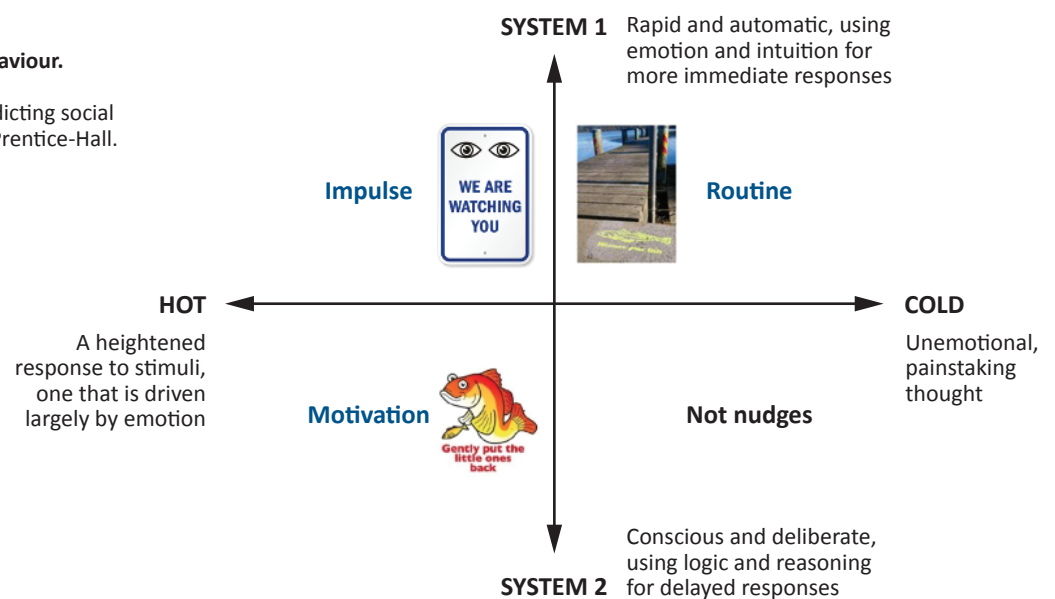


Figure 4. Nudge classification across two dimensions: system 1, 2 and hot, cold.
Adapted from: Codagnone et al. in the BE Guide (2014). In each quadrant we give examples described in detail in text.





Recreational fishers retrieving boats. Image: Matt Navarro, UWA



Great Barrier Reef. Image: (c) Matt Curnock

Applying nudge theory to the case of recreational boating and fishing

We use the Nudge classification in Figure 4 to consider the types of nudges available for the case of compliance of recreational boating and fishing compliance in marine parks. Characterizing the two dimensions and which audience you are working with is key to applying this theory.

- **Impulse:** In Quadrant 1, the mind is in System 1 with a hot cognitive state, causing people's behaviours to be driven by typical impulsiveness. Here we use nudges to activate our System 2 to help bring our System 1 under control, to de-bias. For example, loud ringing or beeping alerts integrated into existing fishing apps could create a 'circuit breaker' for fishers caught in the moment need to actively turn off when they stray into Green (No Fishing) Zones.
- **Routine:** In Quadrant 2, the mind is in System 1 but with cold cognition, resulting in the fairly routine situations where people are exercising judgement, but their judgement is affected by biases stemming from System 1. Here we use nudges to play System 1's biases against each other, to counter-bias. For example, to counter a fisher's present bias which may cause them to procrastinate in terms of renewing their fishing licence, we can leverage their status quo bias where the default is that their licence is automatically renewed unless they opt-out. The default could also incorporate additional fees in contribution to conservation initiatives which they can opt-out of (Mackay et al. 2018).
- **Traditional policy space:** In Quadrant 3, the mind is in System 2 with cold cognition, resulting in deliberate and calculated decisions as expected from a perfectly rational person. Here there is no gap between planned and intended behaviour. This is not nudging territory.

- **Motivation:** In Quadrant 4, although the mind is in System 2, it is experiencing a hot cognitive state, resulting in weakness of will (lack of self-control) to act in the intended manner. Here we use interventions which can motivate people to act in the way they know is right. For example, using persuasive messaging which appeals to their ego and morals to encourage fishers not to keep anything below the size limit. In Tasmania, the Inland Fisheries Service uses persuasive messaging on the ruler they distribute to measure trout. Similarly, Tasmania's FishCare encourages fishers to "Put the little ones back gently" (Mackay et al. 2018).

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Meet your knowledge holders

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