WWF

FACTSHEET

2014

Smart Fishing Initiative

TARGET REFERENCE POINTS:
AIMING FOR THE RIGHT LEVEL

A Target Reference Point (TRP) is defined by a single or small set of measurable fishery indicators such as fishing mortality rate, yield, or stock biomass that are used to judge if the current state of the fishery is desirable. Unlike a Limit Reference Point (LRP), which is a biologically-based fish stock size or level of fishing that managers seek to avoid, a TRP represents a fish stock size or level of fishing which managers strive to achieve and maintain to best meet the management objectives of the fishery (such as stock sustainability or harvest stability). A TRP incorporates biological, ecological, social, and economic considerations. It should never be lower than the LRP and should be sufficiently higher to ensure managers have a buffer to account for information that is uncertain.

Example 1: Generating Wealth through Good Investments in Sustainability

Establishing a TRP requires considering and balancing several interests to ensure ecological sustainability as well as economic viability and social/cultural benefits of the fishery. However, doing so requires that fishermen and managers determine what the objectives of the fishery will be. For instance, existing fishermen could desire high profit margins through limited fishing access rights and resulting high stock sizes. Alternatively, governments could desire a high level of employment with lower profit margins associated with a large fleet size. Other considerations might include limits on gear types or techniques that favour a particular social goal, such as a preference for artisanal hand line fishing that benefits the traditional and cultural aspects of a particular region. These preferences and interests, also known as “management objectives”, must be determined and a balance among competing objectives sought before a representative TRP can be selected. However, managers may elect to select a precautionary TRP in the interim as a benchmark for future development of a more refined TRP that adequately balances all management objectives.

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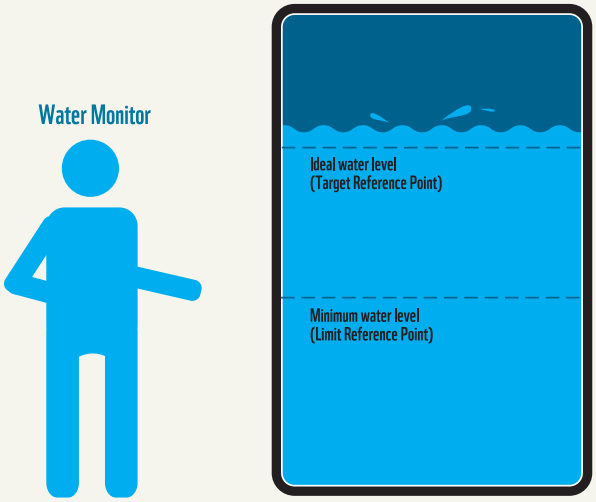
Example 2: Keep the Water Flowing

Consider again the water tank for a small city or village addressed in the LRP Factsheet. When the tank is full, there is plenty of water to go around as regular rainfall replenishes the tank, which is like a healthy fish stock. Recall that rainfall represents the recruitment into the water resource, replenishing the water lost through use in the community (fishing mortality) and natural leaks and evaporation (natural mortality). Weather and climate variation represent uncertainty. To ensure that the water tank does not drop too low, a good city manager or mayor will monitor the tank level and try to maintain it at a level that ensures everyone always has adequate water for their needs. This level could represent the target reference point. The Manager might consider certain management objectives, such as ensuring enough water to allow a full load of laundry to be done every day by every member of the village. The manager might also consider reducing the water allotment for individual laundry in favour of allowing greater irrigation of crops. In either case, the goal is to maintain the water tank at a target level that meets the management objectives while accounting for information uncertainty that otherwise might lead to an accidental breaching of the LRP. Like with LRPs, TRPs might be interpreted by the manager as a rate of daily water use (akin to a fishing mortality based reference point) or simply the desired level of water in the tank (akin to a stock biomass based reference point).



How much distance should there be between the LRP and TRP?

The best answer is "it depends." If there is a large degree of uncertainty in the science used to assess the fishery, there should be a larger "buffer" between the LRP and TRP. The lower the uncertainty, a smaller buffer can be justified. Information uncertainty can be substantially reduced by improving measures for recordkeeping and reporting in the fishery. See WWF's Fact Sheet(s) on uncertainty and risk for more information.

WARNING: Setting TRPs alone does not ensure the target will be met! Strong monitoring, control, and surveillance mechanisms must be in place to not only properly implement management measures and ensure compliance, but also to ensure that the appropriate information is collected and incorporated into stock assessments. You cannot know if you are achieving the target (i.e., your objectives) if you do not have the information to indicate where the stock level is in relation to the TRP.

Our Smart Fishing Vision and Goals:

Vision: The world's oceans are healthy, well-managed and full of life, providing valuable resources for the welfare of humanity.

2020 Goals: The responsible management and trade of four key fishery populations results in recovering and resilient marine eco-systems, improved livelihoods for coastal communities and strengthened food security for the Planet.

Why we are here
To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.

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For more information

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