Brief review of approaches to Splendid Alfonsino management

This document briefly reviews the approaches used by other RFMO's and Nations to manage stocks of Alfonsin (Beryx sp.) around the world. *Beryx* sp. are globally distributed on continental slopes and seamounts at depths from 200-1300 m. They have historically supported commercial fishing in a number of RFMOs (Table 1). RFMOs have used various approaches to maintain or recover stocks of *Beryx* sp. Measures include spatial closures (SPRFMO), effort controls (NPFC, NEAFC, SIOFO), and quota systems based on historical catch (SEAFO). In one case (NAFO) the fishery was closed to protect an overfished stock and has not been re-opened. Only one of the RFMOs conducts a stock assessment (defined here as a model based approach to determining stock status, sustainable yield or MSY). None of the RFMOs use a fishery-independent survey based approach. None of the RFMOs use an adaptive management approach (where adaptive management is defined as a structured, iterative approach to decision making with a goal of reducing uncertainty via monitoring).

Table 1. List of RFMOs with *Beryx* sp. fisheries in deep-water and general description of how management of these fisheries are approached.

RFMO	Approach to management/assessment	Stock assessment	Adaptive management?
NAFO	Closure in 2006 to protect overfished stock	No	No
NEAFC	Effort controls (not to exceed 65% of maximum effort)	No	No
SEAFO	Use nominal catch to set a TAC (average of last three years of catch*0.8 for uncertainty')	No	No
SIOFO	Y/R assessment guides target size/age at fishery recruitment	Yes	No
SPRFMO	Spatial closures (limited area for bottom fishing)	No	No
NPFC	Limited entry (effort control, number of vessels and mesh size restriction)	Yes	No

Beryx sp. also supports commercial fisheries that occur within nations EEZs for six cases (Table 2). For these fisheries, stock assessment is more often used (50% of cases) to guide management

decisions. In the case of the EU fisheries, sometimes different approaches are used in the different stock areas. Of the four open fisheries, some type of quota-based system is used for three of them, while the fourth (Japan) uses effort controls.   Two of the historical fisheries are closed since the most recent assessment of status (Chile in 2012 and the USA in 1986). None of these fisheries implement an adaptive management approach.

Table 2. List of *Beryx* sp. fisheries that fall within EEZ's and a general description of how management of these fisheries are approached.

Others (inside EEZ)	Approach to management/assessment	Stock assessment	Adaptive management?
Australia	TAC based on catch-curve analysis (Tier 3 fishery under Australian management)	Yes	No
New Zealand	TAC based on CPUE as an index of biomass	No	No
Chile	Closure based on most recent stock assessment (2012)	Yes	No
EU Continental Slope	Explicitly prohibit fisheries expansion, TAC system with area-gear closures, length, gear, effort restrictions (fishing days at sea or number of vessels (aggregate power function))	No	No
USA	Closure based on assessment of overfished status (since 1986)	No	No
Japan	Limited entry (effort control, number of vessels)	Yes	No