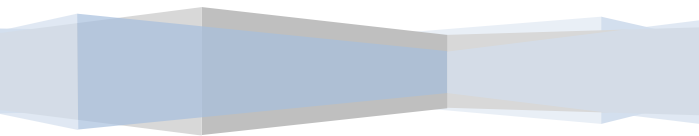


# **Snow crab in Norwegian management zone**

Biological Advice 2017

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## Advice Snow crab

### Advice for 2017

Harvesting and biomass: The management goals can be achieved with different risk tolerances. The probability that the fishing mortality exceeds  $F_{msy}$ , that the biomass will be lower than  $B_{msy}$  and that the stock will increase one year ahead with different fishing options is as follows:

	Catch option (tonnes)			
	2700	3600	4500	5400
Sense. fishing mortality > $F_{msy}$	16 %	34 %	53 %	68 %
Sense. file < $B_{msy}$	100 %	100 %	100 %	100 %
Sense. for the population to increase	98 %	91 %	78 %	61 %

F should rarely have more than approx. 50% probability of exceeding  $F_{msy}$ , normally this probability should be a maximum of approx. 35%. Over time, efforts should be made to increase the stock to close to  $B_{msy}$  to ensure maximum production and contribute to stability in the fishery.

Minimum size: Minimum size of 100 mm shield width will ensure high value capture and protect the stock's reproductive potential.

Closure: Fishing should be avoided during periods with a high proportion of soft crab and crab with low meat density. A closing period within the period 1 June to 31 August may be considered and / or ongoing monitoring on board with the associated closing regime.

### Management objectives (defined by NFD)

The snow crab shall be managed with the aim of sustainable harvesting, which provides a basis for value creation for society, and based on the knowledge base on how the species affect each other in the ecosystem.

This is to be achieved by balancing the sub-goals:

1. Maximizing long-term catch yields
2. Minimize the risk of unwanted ecosystem effects

### The basis for the advice - rewriting qualitative management goals into measurable references.

The majority of the stock is in the Russian management zone and spreads from here into the Norwegian management zone (NØS, the Norwegian continental shelf and the Fisheries Protection Zone around Svalbard). The majority of the potential habitat for snow crabs in the Norwegian management zone has not yet been colonized or does not have crab densities of commercial interest. For the time being, only the area outlined in Figure 1 is considered usable. Calculations of the catch potential for 2017 are based on the distribution of suitable habitats within this area.

Ad. sub-objective 1. The highest possible long-term catch yield is achieved by simultaneously trying to optimize catch volume and catch rates. The optimal compromise between the highest possible catch amount and catch rate is found in a taxation close to (slightly below)  $F_{msy}$ . Over time, this corresponds to a biomass (fishable stock) that is close to  $B_{msy}$ . Such a standing stock will ensure high production and at the same time act as a buffer for variable recruitment and promote stability in the fishery.