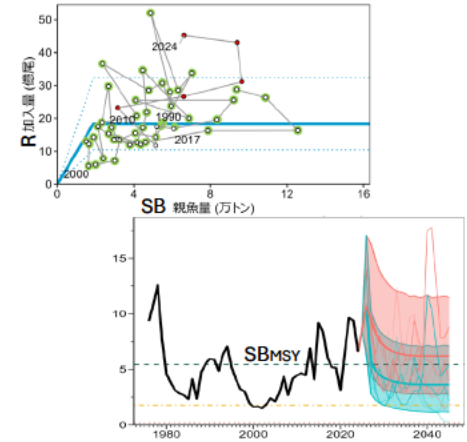
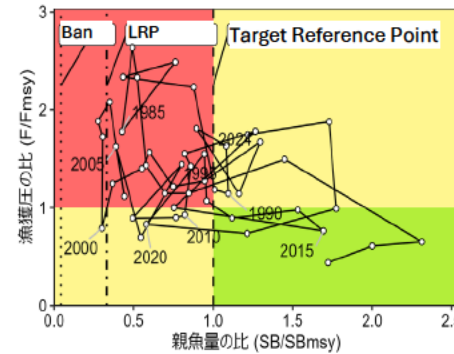
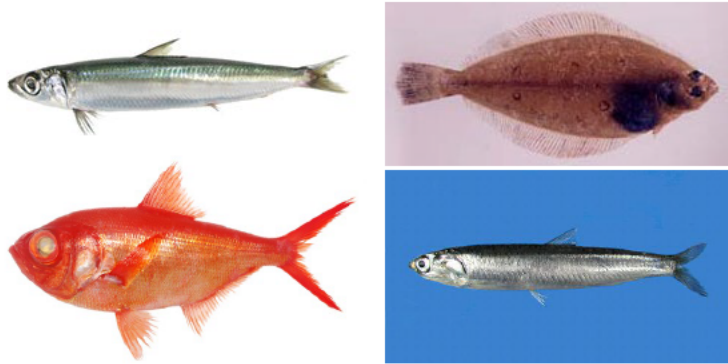


# Japanese fish stock assessment for 192 species

- I. Estimating stock size and target reference points using (or not using) population dynamics models, and proposing harvest scenarios based on  $F_{MSY}$ ,  $F_{\%SPR}$ , etc. for 54 stocks\* of 28 species

\*The total annual catch of 54 stocks accounts for more than 80% of total catch in Japan.

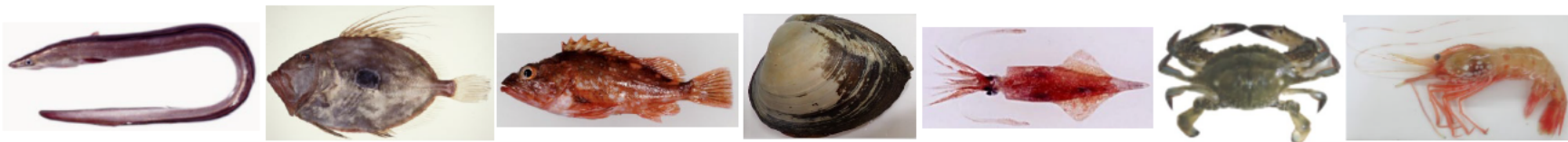


(I. Fisheries management involves stakeholder adoption of HCR, calculation of ABC, and setting of TAC for the following year based on the results of annual stock assessments.)

- II. Estimating stock status without target reference point for 34 stocks of 28 species



- III. Stock status surveys for 155 species in 187 areas



(II.III. Input and technical control (excluding TAC) are mainly applied for fisheries management measures.)

# I. 28 stock assessment species (target reference points have been proposed)

Japanese sardine	<i>Sardinops melanostictus</i>
Round herring	<i>Etrumeus teres</i>
Japanese anchovy	<i>Engraulis japonicus</i>
Chub mackerel	<i>Scomber japonicus</i>
Spotted mackerel	<i>Scomber australasicus</i>
Japanese Spanish mackerel	<i>Scomberomorus nipponius</i>
Japanese jack mackerel	<i>Trachurus japonicus</i>
Round scad	<i>Decapterus maruadsi</i>
Other Scads (Amberstripe, Mackerel, Red, Roughear, and Shortfin scads)	<i>Decapterus muroadsi, D. macrosoma, D. macarellus, D. tabl, and D. akaadsi</i>
Japanese amberjack	<i>Seriola quinqueradiata</i>
Japanese red seabream	<i>Pagrus Major</i>
Japanese sand lance	<i>Ammodytes japonicus</i>
Walleye pollock	<i>Gadus chalcogrammus</i>
Pacific cod	<i>Gadus macrocephalus</i>
Arabesque greenling	<i>Pleurogrammmus azonus</i>
Splendid alfonsino	<i>Beryx splendens</i>
Bastard halibut	<i>Paralichthys olivaceus</i>
Yellow striped flounder	<i>Pseudopleuronectes herzensteini</i>
Shotted halibut	<i>Eopsetta grigorjewi</i>
Willow flounder	<i>Tanakius kitaharai</i>
Pointhead Flounder	<i>Cleisthenes pinetorum</i>
Flathead flounder	<i>Hippoglossoides dubius</i>
Roughscale sole	<i>Clidoderma asperrimum</i>
Deep sea smelt	<i>Glossanodon semifasciatus</i>
Japanese pufferfish	<i>Takifugu rubripes</i>
Japanese flying squid	<i>Todarodes pacificus</i>
Snow crab	<i>Chionoecetes opilio</i>
Red snow crab	<i>Chionoecetes japonicus</i>

