

implementation of BTA. This provides an estimate of the time-path of increases in future landings attributable to the rule. EPA discounts these future changes using two discount rates: a real rate of 3% and a real rate of 7%. Additional detail on EPA's discounting methods is provided in the document entitled "Discounting Commercial and Recreational Fishing Benefits." The Agency notes that discounting is applied to recreational and commercial fishing benefits only. Nonuse benefits are independent of fish age and size and, thus, start as soon as impingement and entrainment ceases.

EPA recognizes that, by addressing species groups rather than individual species, potentially important species-specific differences cannot be accounted for. However, the lack of life history data, fishing mortality rates, and other information necessary to calculate foregone yield and other endpoints of interest at the regional and national level makes it necessary to group species in this way.

C. North Atlantic Regional Study

1. Background: Marine Fisheries of the North Atlantic

Commercial and recreational fisheries of the North Atlantic Region are managed by the New England Fisheries Management Council (NEFMC) according to Fishery Management Plans (FMP's) developed by NEFMC (NMFS, 2002). The NMFS Northeast Fisheries Science Center provides scientific and technical support for management, conservation, and fisheries development.

The multispecies groundfish fishery is the most valuable commercial fishery of the North Atlantic region, followed by American lobster (*Homarus americanus*) (NMFS, 1999a). Important groundfish species include Atlantic cod (*Gadus morhua*), haddock (*Melanogrammus aeglefinus*), yellowtail flounder (*Pleuronectes ferrugineus*), windowpane flounder (*Scophthalmus aquosus*), and winter flounder (*Pleuronectes americanus*). Atlantic pelagic fisheries are dominated by Atlantic mackerel

(*Scomber scombrus*), Atlantic herring (*Clupea harengus*), bluefish (*Pomatomus saltatrix*), and butterfish (*Peprilus triacanthus*) (NMFS, 1999a). Important recreational fisheries of the region include Atlantic cod, winter flounder, Atlantic mackerel, striped bass (*Morone saxatilis*), bluefish, and bluefin tuna (*Thunnus thynnus*) (NMFS, 1999a).

Fifteen groundfish species making up 25 stocks are managed under the Northeast Multispecies FMP of the NEFMC (NMFS, 2002). Table X-2 summarizes the stock status of these species, indicating which stocks are subject to overfishing (the harvest rate exceeds threshold) and which stocks are overfished (stock size is below threshold). Overfishing refers to a level of fishing mortality that jeopardizes the long term capacity of the stock to produce the potential maximum sustainable yield on a continuing basis. In some cases, heavy fishing in the past may have reduced a stock to low abundance, so that it is now considered overfished even though the stock is not currently subject to overfishing.

TABLE X-2.—SUMMARY OF STOCK STATUS FOR HARVESTED SPECIES OF THE NORTH ATLANTIC REGION INCLUDED IN FEDERAL FISHERY MANAGEMENT PLANS

Stock (Species in bold are major stocks, with annual landings over 200,000 pounds)	Overfishing? (Is fishing mortality above threshold?)	Overfished? (Is biomass below threshold?)	Approaching Overfished Condition?
Cod:			
Gulf of Maine	Yes	Rebuilding	No.
Georges Bank	No	Rebuilding	No.
Haddock:			
Gulf of Maine	Yes	Rebuilding	No.
Georges Bank	No	Rebuilding	No.
American Plaice	Yes	No	No.
Redfish (ocean perch)	No	Yes	N/A.
Witch Flounder	No	No	No.
Yellowtail Flounder:			
Georges Bank	No	No	No.
Southern New England	No	Yes	N/A.
Cape Cod	No	Rebuilding	No.
Middle Atlantic	Yes	Yes	N/A.
White Hake	Yes	Yes	N/A.
Pollock	Unknown	Unknown	Unknown.
Ocean Pout	No	Yes	N/A.
Atlantic Halibut	Unknown	Yes	N/A.
Windowpane Flounder:			
Gulf of Maine/Georges Bank	No	No	No.
Southern New England/Middle Atlantic	No	No	Yes.
Winter Flounder:			
Gulf of Maine	Unknown	Undefined	Unknown.
Georges Bank	No	Rebuilding	No.
Southern New England	No	No	No.
Silver Hake:			
Gulf of Maine/Northern Georges Bank	Unknown	Rebuilding	No.
Southern Georges Bank/Middle Atlantic	Unknown	Yes	N/A.
Offshore Hake	Unknown	Unknown	Unknown.
Red Hake:			
Gulf of Maine/Northern Georges Bank	No	No	No.
Southern Georges Bank/Middle Atlantic	No	Unknown.

Source: Table 4 in NMFS (2002).