Amendment 16 Mortality Targets

Science and Statistical Committee
New England Fishery Management
Council
April 30 – May 1, 2009

Rebuilding Programs

- Existing Programs:
  - GOM cod, plaice, CC/GOM yellowtail flounder, redfish, white hake, GB cod, GB yellowtail flounder, SNE/MA yellowtail flounder, SNE/MA winter flounder, southern windowpane, ocean pout, *Atlantic halibut*
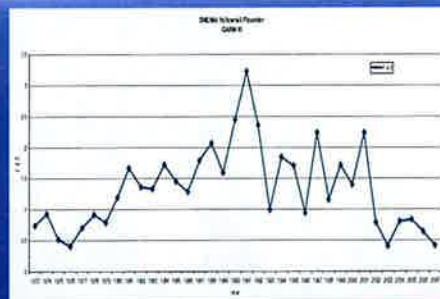- New Programs:
  - Witch flounder, GB winter flounder, pollock, northern windowpane, Atlantic wolffish

Existing Rebuiding Programs

- Rebuilding period and probability defined in earlier action
- From terminal year in assessment:
  - Estimate catch in "bridge" year (2008)
  - Assume a fishing mortality for interim action year (2009)
  - Calculate new rebuilding mortality target using AGEPRO or index-based projections
- Problem: SNE/MA winter flounder

SNE/MA Winter Flounder

- A13 Phased Approach: adjust as necessary in 2009 to rebuild by 2014
- Frebuild=0 will not achieve target by 2014
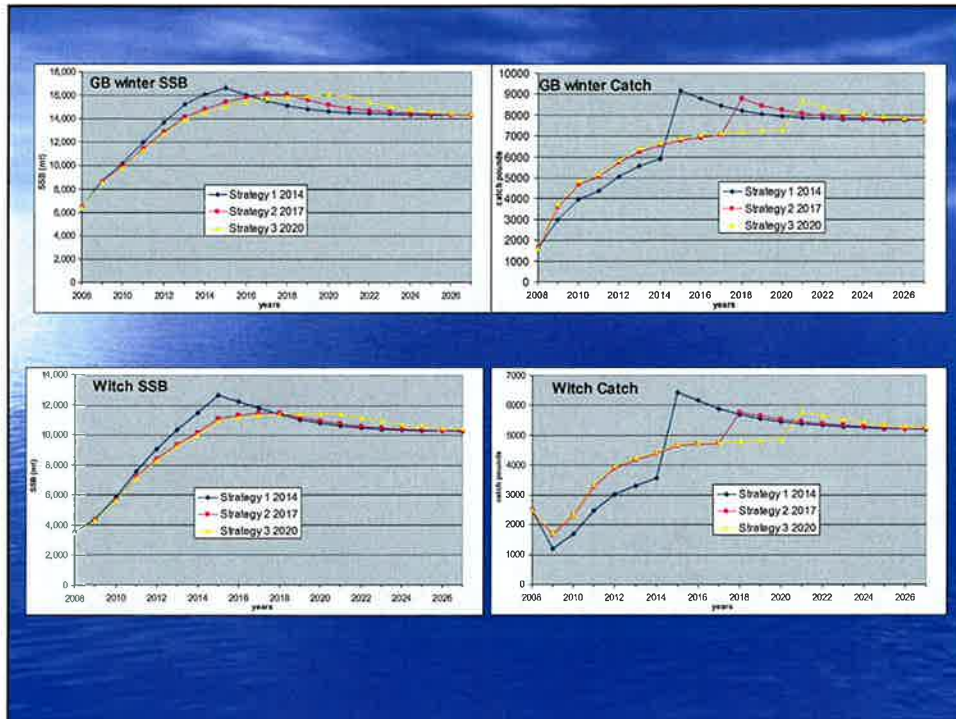- How is ABC set?

New Programs

- From terminal year in assessment:
  - Estimate catch in "bridge" year (2008)
  - Assume a fishing mortality for interim action year (2009)
  - Using AGEPRO or index-based projections, evaluate different rebuilding periods consistent with Council guidance on desired probability of success
- Problem: unreliable index projections

New Programs: Witch, GB Winter

- Can rebuild within ten years at F=0
- NPV slightly higher rebuilding before 2020 and after 2014
- 2017 selected as target year (may not be "optimum")

Species	Stock	Strategy 1 Freb with 75% proba-bility by 2014	Strategy 2 Freb with 75% proba-bility by 2017	Strategy 3 Freb with 75% proba-bility by 2020	2007 Fishing Mortality	2008 Fishing Mortality	Fmsy
Witch Flounder		0.115	0.162	0.166	0.290	0.296	0.200
Winter Flounder	GB	0.167	0.205	0.214	0.280	0.131	0.260

New Programs: Pollock

- Index-based projection seems unreliable:
  - Method allows instantaneous rebuilding (no age structure in the projection)
  - Projects impossible biomass proxy (negative trawl survey index needed in first year of plan) using the assumed 2008 catch in the projection

Pollock (1)

Year	Relative F	3 yr. C. Avg. Index	Landings (000 mt)
2007	10.464	0.898	9.400
2008	21.240	0.471	10.003
2009	5.660	0.471	2.664
2010	4.317	0.537	2.317
2011	4.317	0.612	2.643
2012	4.317	0.698	3.014
2013	4.317	0.796	3.438
2014	4.317	0.908	3.921
2015	4.317	1.036	4.472
2016	4.317	1.181	5.100
2017	4.317	1.347	5.817
2018	4.317	1.537	6.634
2019	4.317	1.752	7.566
2020	4.317	1.999	8.629

- Projection predicts 2008 Avg. Index of 0.471
- 2007 and 2008 index known and model predicted 2008 3-yr. avg. is impossible

	0.754	2007 index
	0.982	2008 index
<0		unlikely 2009 index

Pollock (2)

Year	Relative F	3 yr. C. Avg. Index	Landings (000 mt)
2007	10.464	0.898	9.400
2008	11.500	0.868	9.982
2009	5.660	0.867	4.910
2010	4.564	0.963	4.395
2011	4.564	1.069	4.878
2012	4.564	1.186	5.414
2013	4.564	1.317	6.010
2014	4.564	1.462	6.671
2015	4.564	1.622	7.404
2016	4.564	1.801	8.219
2017	4.564	1.999	9.122

- Using the observed two-year average index for 2008 is probably a more realistic assumption for the projection

New Programs

- Northern Windowpane:
  - "…it was concluded that it was not appropriate to calculate F rebuild for this stock." (GARM III Panel)
- Atlantic Wolffish:
  - "The Panel believed that stock projections would be unreliable and should not be undertaken." (DPWG)

Questions?