

**RI Marine Fisheries Council
Winter Flounder Advisory Panel
Meeting Minutes
December 8th, 2010, 6:00 PM
URI Bay Campus, Coastal Institute**

Ken Ketcham, Chairman	Stephen Parente
Michael Bucko *	Paul Karcz *
Richard Hopkins	Mike Colby *
George Allen *	David Taylor
Bob Rheault	Bob Smith *
Gerry Caravalho	John Lake

There was not a quorum for the meeting so the chair declared it was informational. K. Ketcham started the meeting and went over the agenda and passed the meeting onto J. Lake who gave a presentation of the Southern New England / Mid Atlantic Bight Winter Flounder (SNE/MAB WFL) Stock status. J. Lake went over the fisheries dependent and independent data used by the stock assessment and described how the model calculates the stock status. The assessment conducted in 2008 indicates the SNE/MAB WFL stock is over fished with overfishing occurring. Fishing mortality (F_{2007}) is calculated as 0.649 which is well above the target (F_{msy}) of .248. Spawning stock biomass (SSB_{2007}) was calculated to be 3368 metric tons (mt) only 95 of the target (SSB_{msy}) 38,761 mt. The assessment indicates the SNE/MAB WFL stock is at very low population levels. It is modeled that neither a fishing mortality of F_{msy} or zero fishing mortality would bring the SSB to the target level by 2014. It is still important to work towards the target SSB because the stock is so low that any gains are beneficial additionally the biological reference points may be recalculated in the future.

Next the panel moved on to discuss potential spawner sanctuaries in Mount Hope Bay and the Coastal Ponds. J. Lake explained that research has revealed that winter flounder display affinity to specific locations within coastal ponds and embayments for spawning. Research at URI has shown that these spawning aggregations are genetically distinct which raises concern that once a local population is depleted it will not return to that area. B. Rheault asked if sources and rates of mortality occurring between the various life stages of winter flounder (eg from larval to juvenile). J. Lake responded that a study had been done by URI for RIDFW which examines these factors in the Narragansett Bay winter flounder population. The report is titled "Examining the Decline of Narragansett Bay Winter Flounder" by J. Collie and A. DeLong. There was some discussion on predation of juvenile winter flounder by cormorants and seals. There was great concern over cormorant predation on winter flounder, and it was suggested that research be conducted to determine at what rates cormorants are preying on winter flounder.

The next item on the agenda was the discussion of Mount Hope Bay as a winter flounder spawner sanctuary. The Discussion was led by George Allen. G. Allen explained stocks

of winter flounder in the bay are very low and have not recovered despite the closure of winter flounder fishing in the bay for many years. G. Allen related a conversation with M. Gibson about the need to protect the flounder when they move out of the bay to make the bay closure effective. G. Allen reiterated that the bay and coastal ponds have distinct populations that might not be able to recover either because of increased water temperatures in the bay or due to high fishing pressure. G. Allen indicated that now with the SNE/MAB winter flounder closure this protection is being offered and might allow for some fish to return to the bay. He also indicated with the cooling towers at the dominion point power plant coming online the conditions in Mt Hope bay should be more conducive to winter flounder spawning because the water should not be as warm during the winter. He stated that we have shellfish sanctuaries and a tautog spawning closure in the bay already. The sanctuary should protect adult spawners and juveniles which settle to the bottom. G. Allen would like to explore the use of raised foot ropes trawl gear in Mount Hope Bay so the commercial fishery could continue with less impact on the flounder. He would like to see the RIDFW conduct a survey in 2012 of the area to determine if adult spawners and juveniles are returning to Mt Hope Bay in response to the cooling towers. If there are fish returning to Mt Hoe Bay they should be protected so they may increase in numbers. He stated that he recognizes that there are jurisdictional issues as part of Mt Hoe Bay is in Massachusetts. S. Parente commented that he thinks that the definition of spawner sanctuary for finfish as well as what restrictions it would entail needs to be established. Would fishing for other species be prohibited? G. Allen replied no other fishing would be allowed, the intent is to use gear which protects winter flounder. K. Ketcham clarified that the intent is not to stop fishing in Mt Hope Bay but to implement a way for fisherman to operate with gear and practices that protects juveniles. G. Allen also indicated that the YOY age 1 winter flounder can suffer mortality from other means besides fishing such as low oxygen and that juvenile populations of age 0 and 1 should be examined. R. Smith state he thinks there should be some caution as to whether it should be called a sanctuary because the word implies many restrictions on activities in the area and that it should be called something else. S. Parente stated that in the salt ponds in the south shore the problem with populations are predation by cormorants, seals and striped bass. The number of cormorants has increased greatly since the 1970's. Any recovery of winter flounder will be hampered because many of the juveniles will be eaten. G. Carvalho stated that fishing for winter flounder has been closed in the bay for about 15 years. When the bay freezes over there are good winter flounder years because the small fish are protected from predators such as shrimp. Winter flounder fishing is gone in the bay nobody targets them and there is very little bycatch. The decline is not due to fishing but rather predation and water quality in the bay. He stated that water temperature drives this and that unless the water temperatures stop increasing the fish will not return. He mentioned that many fish species are shifting their distributions in response to climate change. He stated that he and other commercial fishermen would not target fish in the bay if they saw them so they could come back. He feels that restricting fishing in Mt Hope Bay will not be effective in increasing the population and that environmental factors are driving the process. G. Allen replied that it would be a worthwhile effort to find out if the sanctuary would work. M. Bucko asked if transplanting winter flounder eggs to depleted areas would be feasible and if so the transplanted fish would need a protective sanctuary of some sort. G. Carvalho would

support transplants but feels that they would not be successful because of environmental conditions. M. Bucko noted that other improvements along with the cooling towers have been accomplished and that in the future they bay could be healthy enough to support winter flounder again. R. Reault mentioned that oyster beds have been identified as good winter flounder habitat by offering protection from predators. In Long Island Sound there have been recent good oyster years which could enhance founder populations. If spawner sanctuaries or transplants are established the correct habitat should be selected (sandy bottom with shell hash). Part of the problem is that these types of bottoms are being replaced with black muddy bottom types that are not ideal to winter flounder and are often associated with low dissolved oxygen during the summer. R. Smith stated sanctuaries already exist in the salt ponds because nobody is fishing for winter flounder in them because the numbers are so low. He stated that he has observed in the RIDFW fyke net survey (which he helps with) that over they years the only fish being caught were large ones and that no small ones were recruiting into the catch. He stated that winter flounder produce enough eggs and that the problem is water temperature, pollution and predation. He does not want the salt ponds to be called sanctuaries but feels the lack of fishing already effectively makes the ponds sanctuaries.

At this point J. Lake gave a presentation on the possibility of closing the coastal ponds to winter flounder fishing. The presentation described the methods and results of the coastal pond survey. The winter flounder juvenile population indexes of the ponds as described by the survey were presented for each of the ponds with a highlight on the low values in Point Judith Pond. The results of the adult winter flounder spawner survey in Point Judith were also presented which indicate a downward trend in the adult population in Point Judith pond. Many panel members noted that the seal population is quite high in Point Judith Pond possible driving the low numbers. R. Smith pointed out that the Point Judith Pond Had been closed to fishing several years back and the population still declined. J. Lake outlined two approaches for consideration of closures in the salt ponds either a more conservative one which would close all the coastal ponds to winter flounder fishing or just to close Point Judith pond to winter flounder fishing. G. Carvalho asked if fishing was taking place in the ponds for winter flounder. J. Lake responded that although there is very little fishing the for winter flounder in the ponds that the closure would be more proactive to protect any potential increases in the population due to recent strict management measures. S. Parente stated that there is a small amount of recreational fishing going on in the ponds but that it is not productive. R. Smith indicated that some recent fyke net work he conducted 5 years ago in Quonny and Charlestown ponds showed that there were very low levels of adults in those two ponds. M. Bucko stated that the tackle shops do not cater to winter flounder fishing any longer because so little is going on. R. Hopkins stated that he is a commercial fisherman on the ponds for many years and has observed the decline of winter flounder and that he and other fishermen fishing for flounders stopped targeting them in the nineties because of low population levels. He stated that it is not over fishing which is the problem but degradation of habitat and high predation rates are to blame. Striped bass populations in the ponds are very high in the ponds and they are preying on the winter flounder and eels in the ponds. He stated that he only sees large eels in the ponds probably because the smaller ones are being eaten by bass. He stated that he has noticed an increase in the amount of low

dissolved oxygen events occurring in the ponds as well as a very large loss of eel grass coverage in the ponds. Development in the form of marinas and shore development has greatly contributed to the decline of good habitat in the ponds. R. Smith stated that he is not opposed to closing the ponds to winter flounder fishing but said it does little good if state waters is still open and questioned whether the current 50 lbs state waters limit should be reexamined. R. Hopkins wanted to clarify that he is not supporting closing the ponds to fishing due to economic impacts on both commercial and recreational fishermen. J. Lake clarified that RIDFW does not want to close the ponds or just Point Judith Pond) too all fishing just to prohibit the possession of winter flounder and that it is a proactive measure aimed at protecting a potential increase in winter flounder numbers as a result of management. S. Parente asked if there have been any efforts to control predation. J. Lake explained that seals and cormorants are protected and that sand shrimp predation would be difficult to control. R. Reault stated that the state could apply for a federal permit to control nuisance populations of cormorants and would like to see more gut content studies on cormorants.

K. Ketcham summed up what should be brought to the council for consideration. First was that G. Allen wanted to see more survey work done in Mt Hope Bay to measure the effect of the new cooling towers. G Carvalho and others noted that surveys do already exist up there by DEM, and Dominion Power. R. Hopkins suggested that a larger quota of Striped Bass be allowed by ASMFC to curb predation by this species. There was some discussion of Striped Bass management. M. Bucko would like to see sunset provisions on any winter flounder closures that are enacted. R. Smith does not think closing the ponds will make much of a difference because there are such low numbers of fish but recognizes that it would protect returning numbers of fish but does not recommend the closure. R. Reault pointed out that it wouldn't hurt the population of winter flounder. G. Allen stated that he thinks it is very important to monitor if fish are returning as a result of the management measures and that if fish are returning they need to be protected. M. Bucko stated that MRIP is not good with rare events and local fisheries but that recreational anglers often see a change in the fishery and asked if there were other methods of collecting recreational. He suggested a management program that took census data from recreational fisherman in the ponds may give a better understanding of the population levels in the future. R. Smith stated that he disagreed and thought that commercial landings would better track winter flounder populations in the ponds due to active/passive gear (instead of bait) being used to catch the fish. Additionally commercial catch is already at census resolution. R. Hopkins also pointed out that recreational fishing in the pond is closed during spawning season while commercial is not so flounder caught during that time would show up in the landings data. M. Bucko stated that he thought the closures in the ponds were a good idea to protect winter flounder. The closure should only last three years and then reconsidered. K. Ketcham asked if the changes to middle bridge in the Narrow River increased the number of winter flounder. J Lake stated that he did not know what effect altering bridge had and that the Narrow River has relatively high number of juveniles compared to the other coastal ponds. The meeting was adjourned by the chair.

Winter Flounder Advisory Panel: 12/8/2010

John Lake - RI DEM Marine Fisheries
401.423-1942
John.Lake@dem.ri.gov



SNE/MA Winter Flounder Landings and Discards

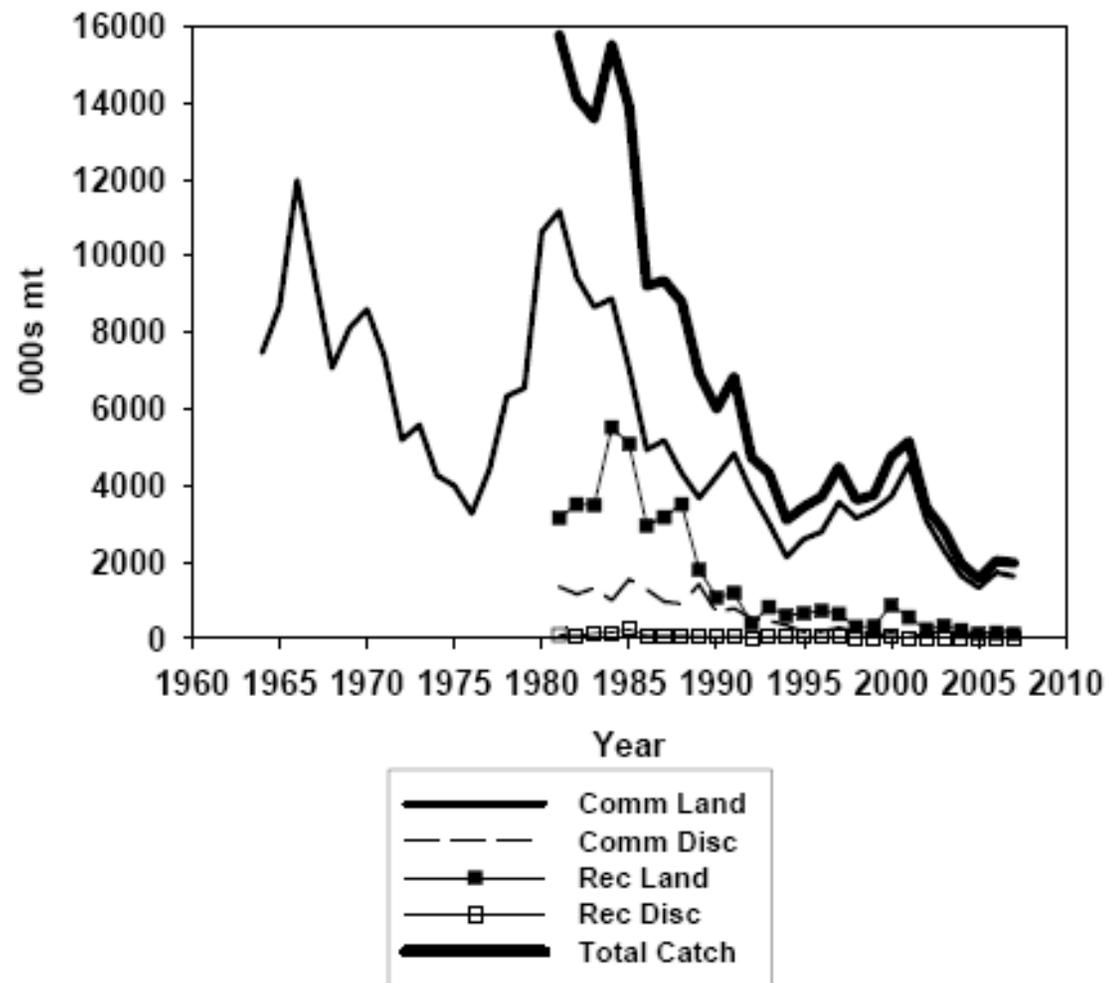


Figure J2. Commercial landings (1964-2007), commercial discards (1981-2007) recreational landings (1981-2007), recreational discards (1981-2007) and total fishery catch (1981-2007) for the SNE/MA winter flounder stock complex.



Map of SNE/MA winter flounder stock

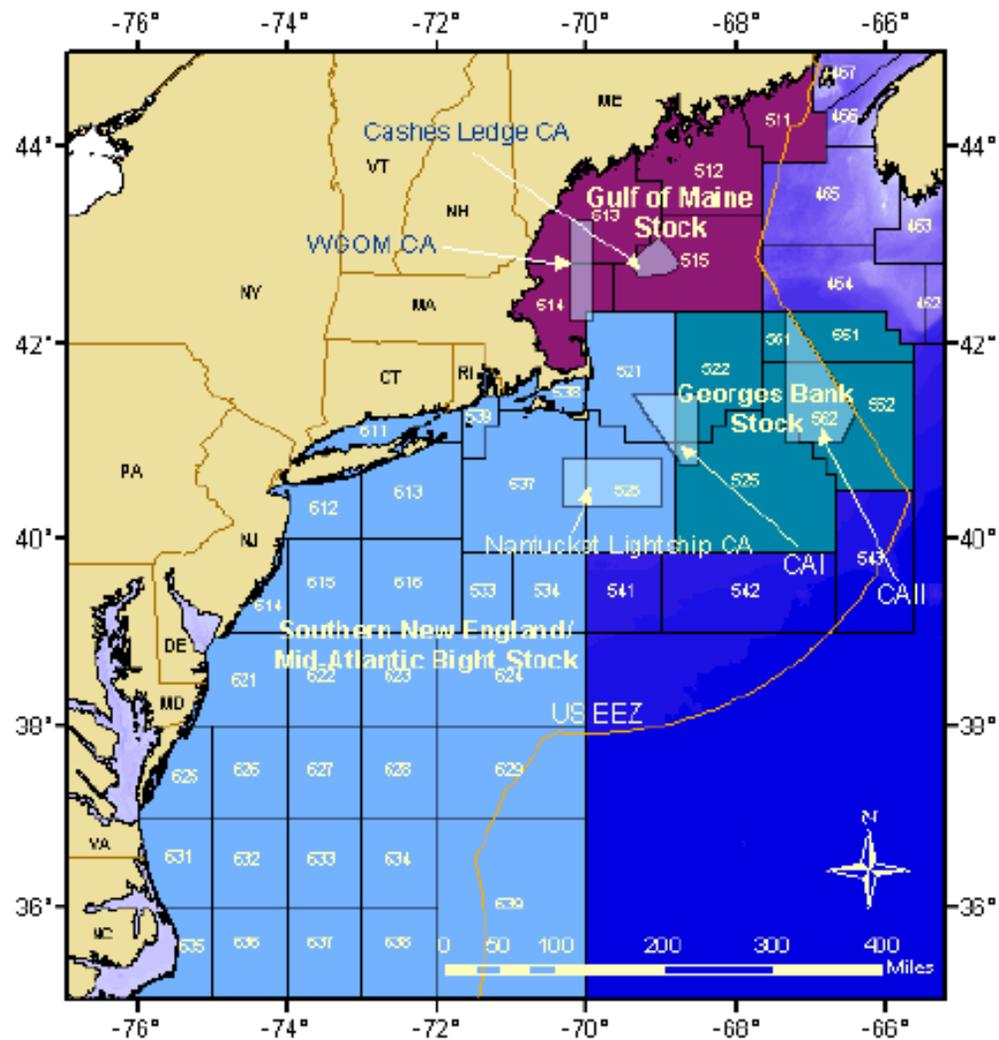


Figure J1. Statistical areas used to define winter flounder stocks. The Southern New England/Mid-Atlantic Bight complex includes areas 521, 526, and 533-639.



Stock Assessment – Model & Data Overview

Assessment Overview

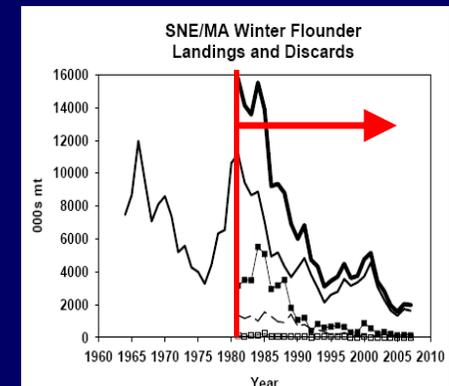
- ◆ Most recent peer reviewed assessment for winter flounder occurred at the 3rd Groundfish Assessment Review Meeting (GARM 3) at the NEFSC, Woods Hole, MA, August 4-8, 2008
- ◆ Next Winter Flounder Stock Assessment scheduled for June 2011.
- ◆ Fishing mortality (F) & stock biomass estimates were generated with Virtual Population Analyses
 - ◆ VPA: backward-projecting age-structured population dynamics model



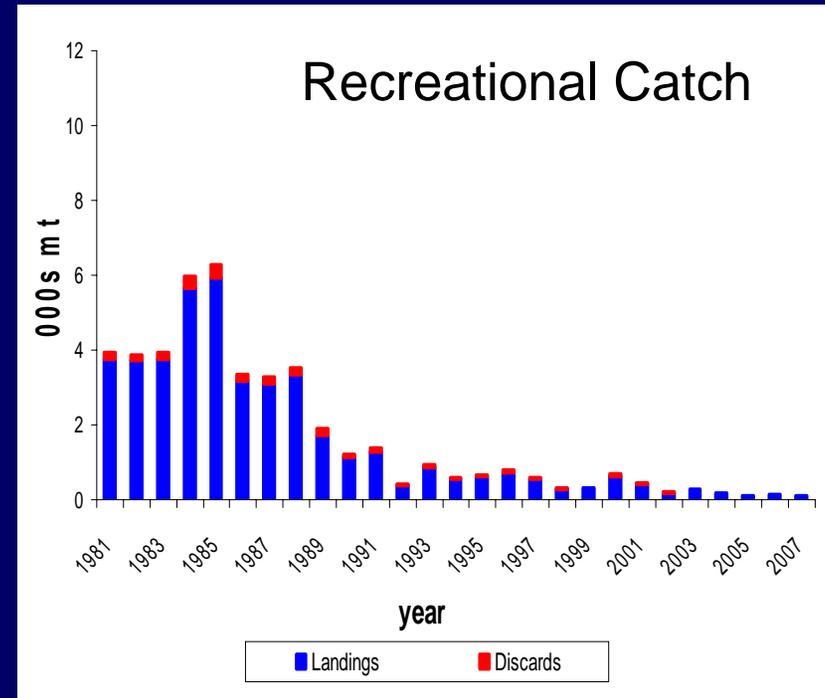
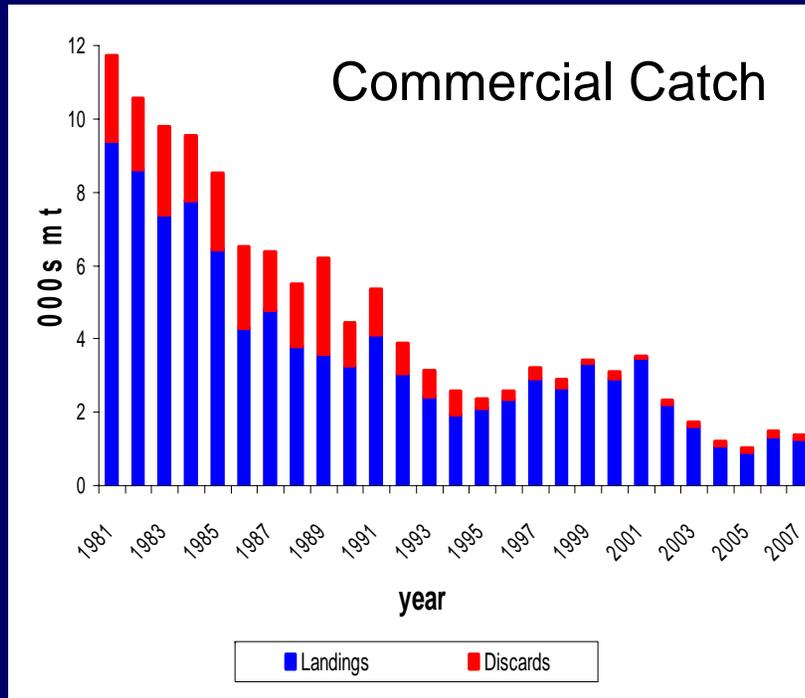
Stock Assessment – Model & Data Overview

Data Considered in Assessment Models

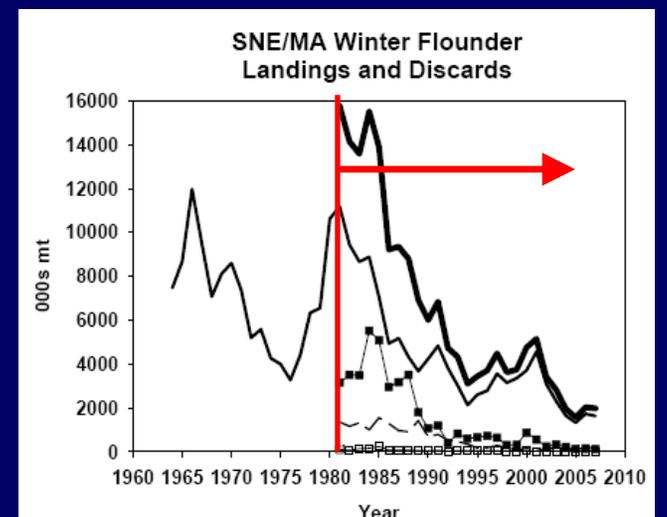
- ◆ Fishery Dependant Data (1981 – 2007)
 - ◆ Commercial & Recreational landings & discards
 - ◆ Port Sampling
 - ◆ MRFSS (MRIP)To assess biological composition of catch
- ◆ Fishery Independent Data
 - ◆ NEFSC Trawls (Spring, Fall, Winter)
 - ◆ State Trawl surveys: MA, RI, CT, NY, NJ, DE
 - ◆ State YOY indices: MA, RI, NY, DE



SNE/MA Winter Flounder Fishery Dependant Data Landings, Discards, & Total Catch

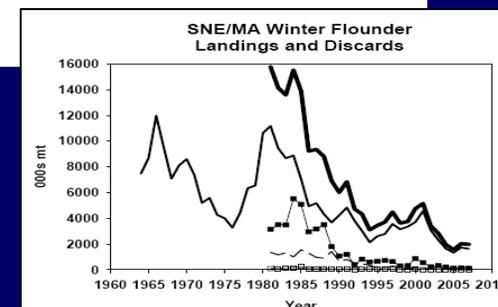
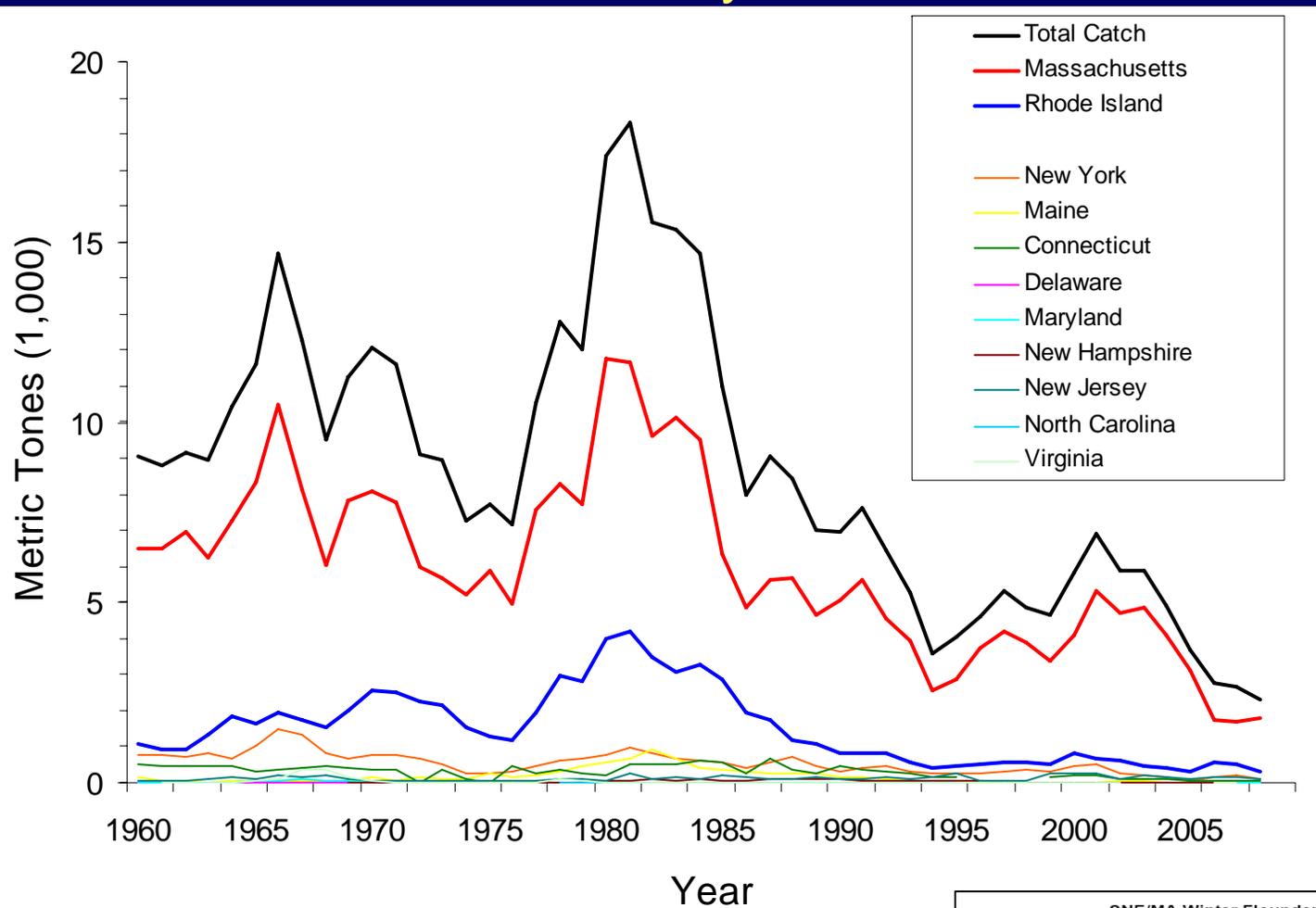


Assessment based on catch data from 1981–2007

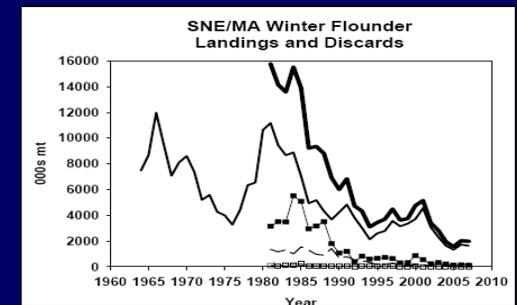
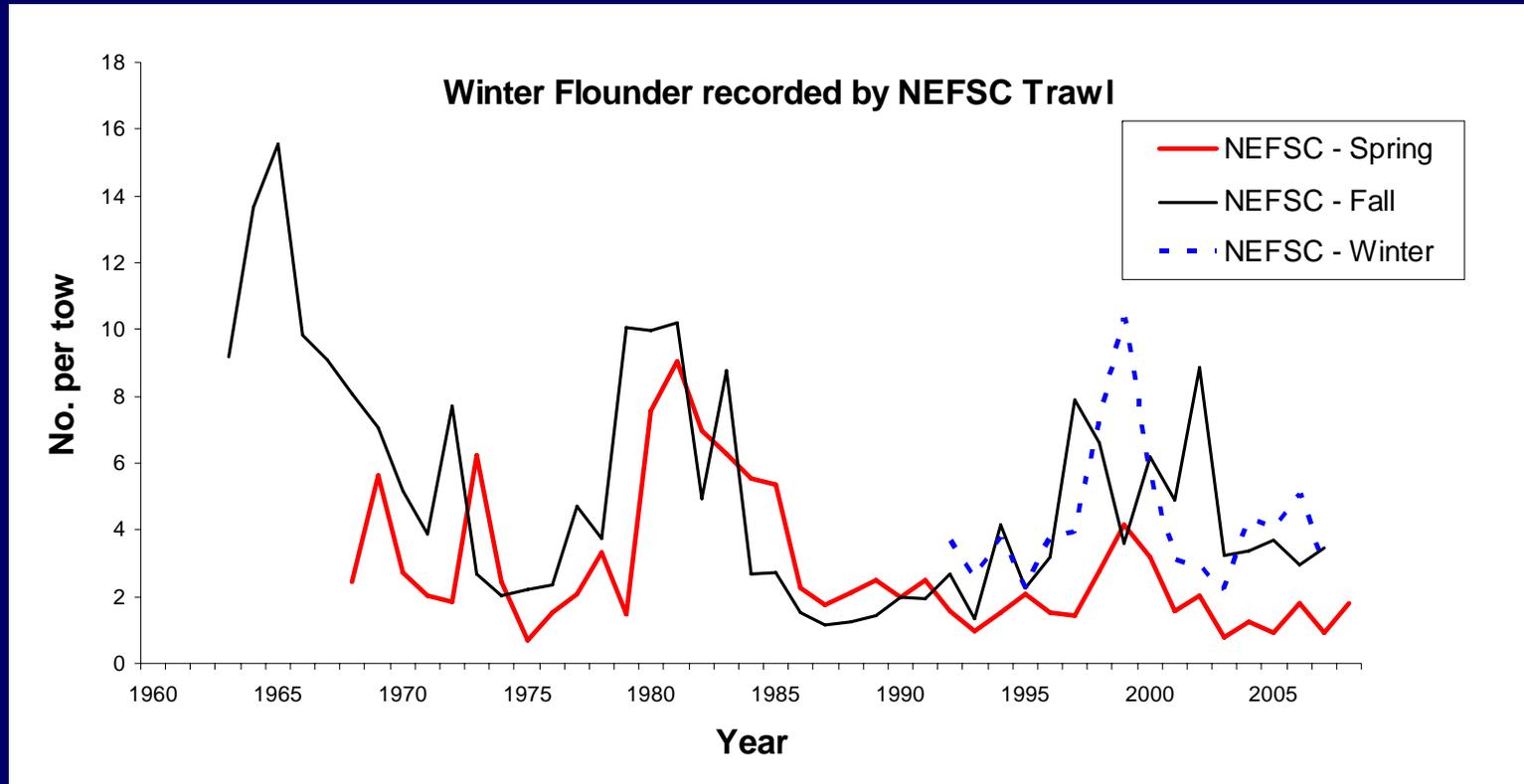


SNE/MA Winter Flounder Fishery Dependant Data

Total Catch by state

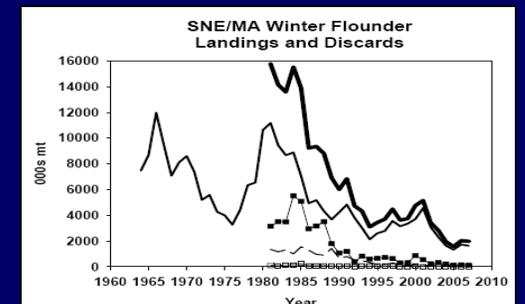
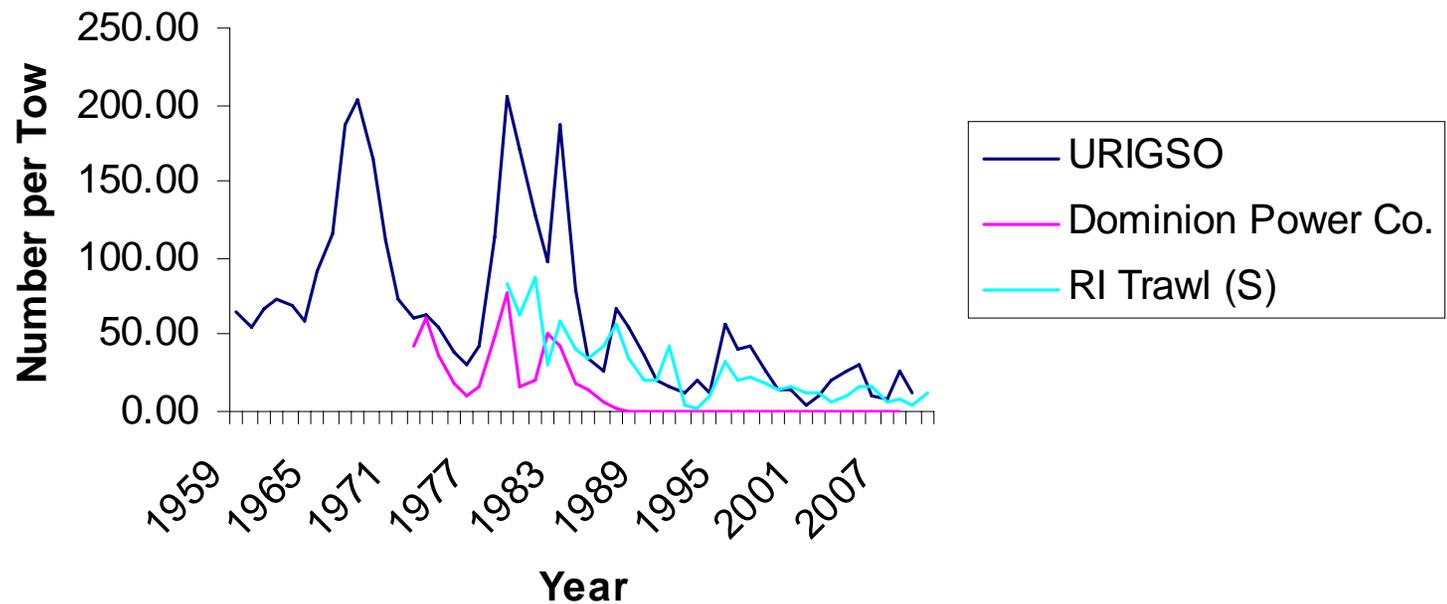


Winter Flounder Fishery Independent Data – NEFSC Trawl Survey



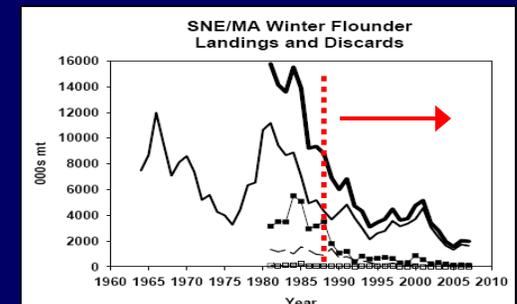
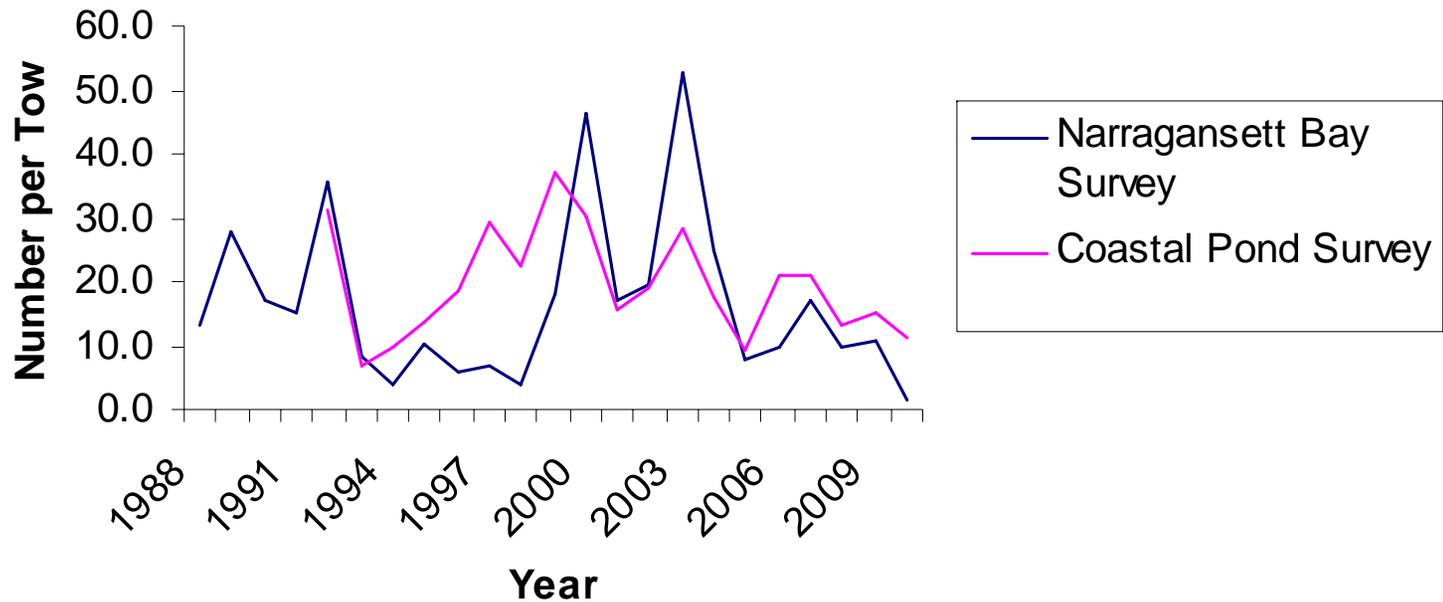
Winter Flounder Fishery Independent Data – RI Trawl Survey

Fishery Independent Trawl Surveys



Winter Flounder Fishery Independent Data – RIDEM Seine Survey (Juvenile Finfish)

Fishery Independent Seine Surveys



Status & Projections

Based on GARM3 Split-run (AGEPRO T2007)

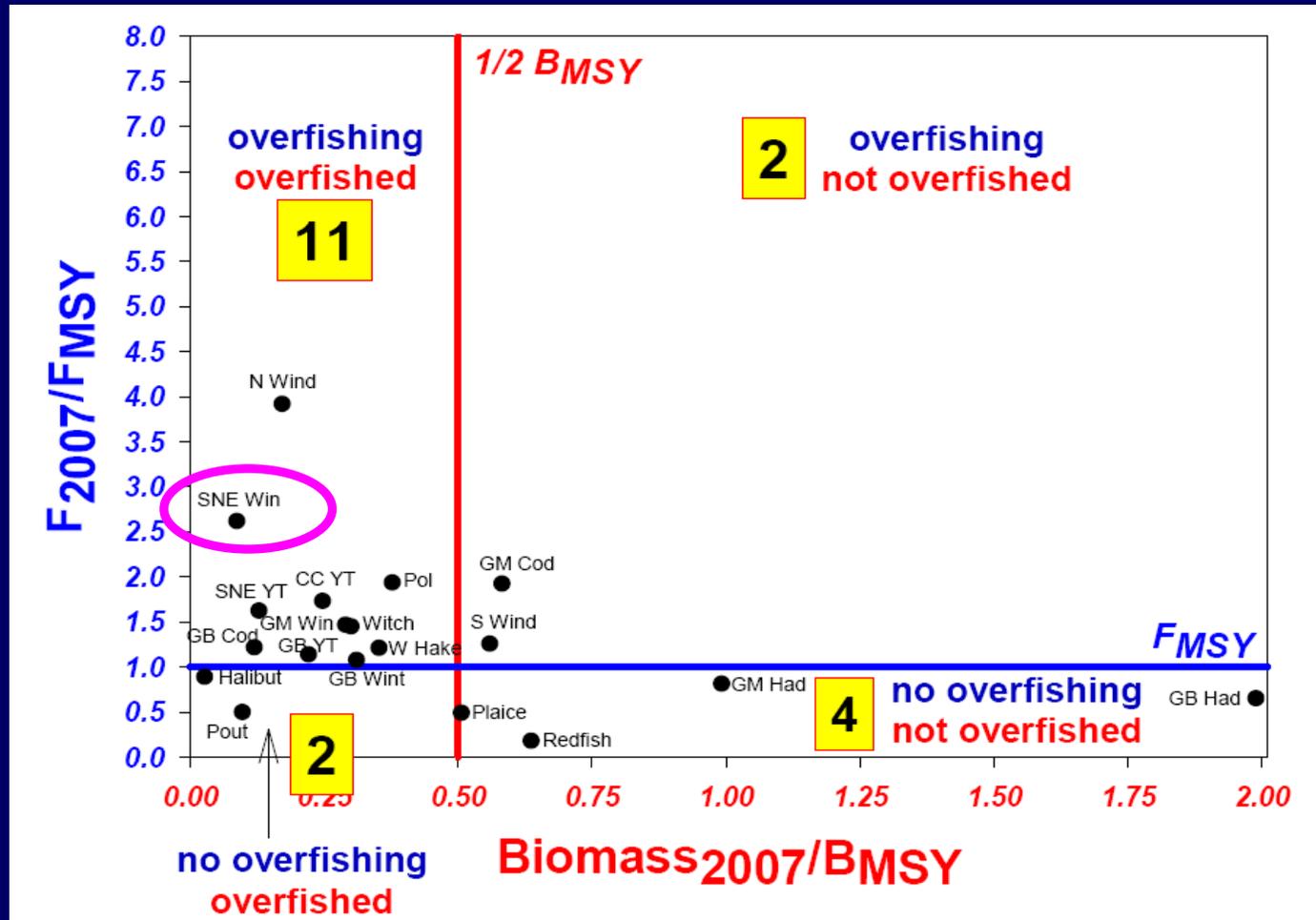
$F_{MSY} = F_{40\%}$	0.248	— Projected 2009-2014
F 2007	0.649	— 80% P (0.522–0.861)
F 2007/ F_{MSY}	2.62	
SSB_{MSY}	38,761 mt	— Projected 2009 - 2014
SSB 2007	3,368 mt	— 80% P (2,936 - 3,825 mt)
SSB 2007/ SSB_{MSY}	0.09	

Projected 2009-2014

F 2009-2014	0.248	F 2009-2014	0.000
Total Catch 2009	1,116	Total Catch 2009	0
SSB 2014	14,202 mt	SSB 2014	28,663 mt
SSB_{MSY}	38,761 mt	SSB_{MSY}	38,761 mt
Prob => SSB_{MSY}	<1%	Prob => SSB_{MSY}	1%



2007 Groundfish Stock Status



SNE/MA winter flounder stock is Overfished & Overfishing is occurring

F 2007/FMSY	2.62
SSB 2007/SSBMSY	0.09

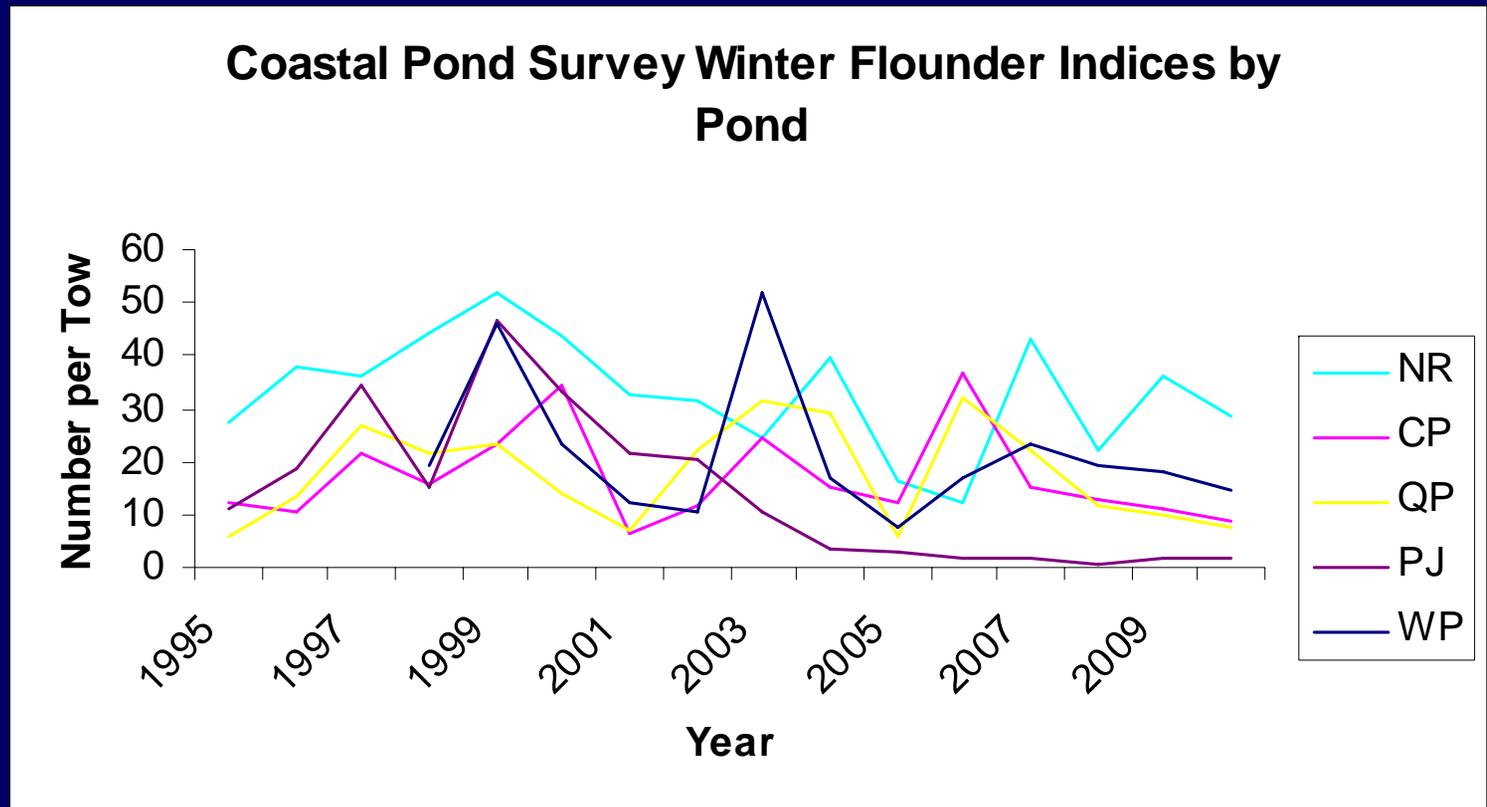


Possible Spawner Sanctuaries

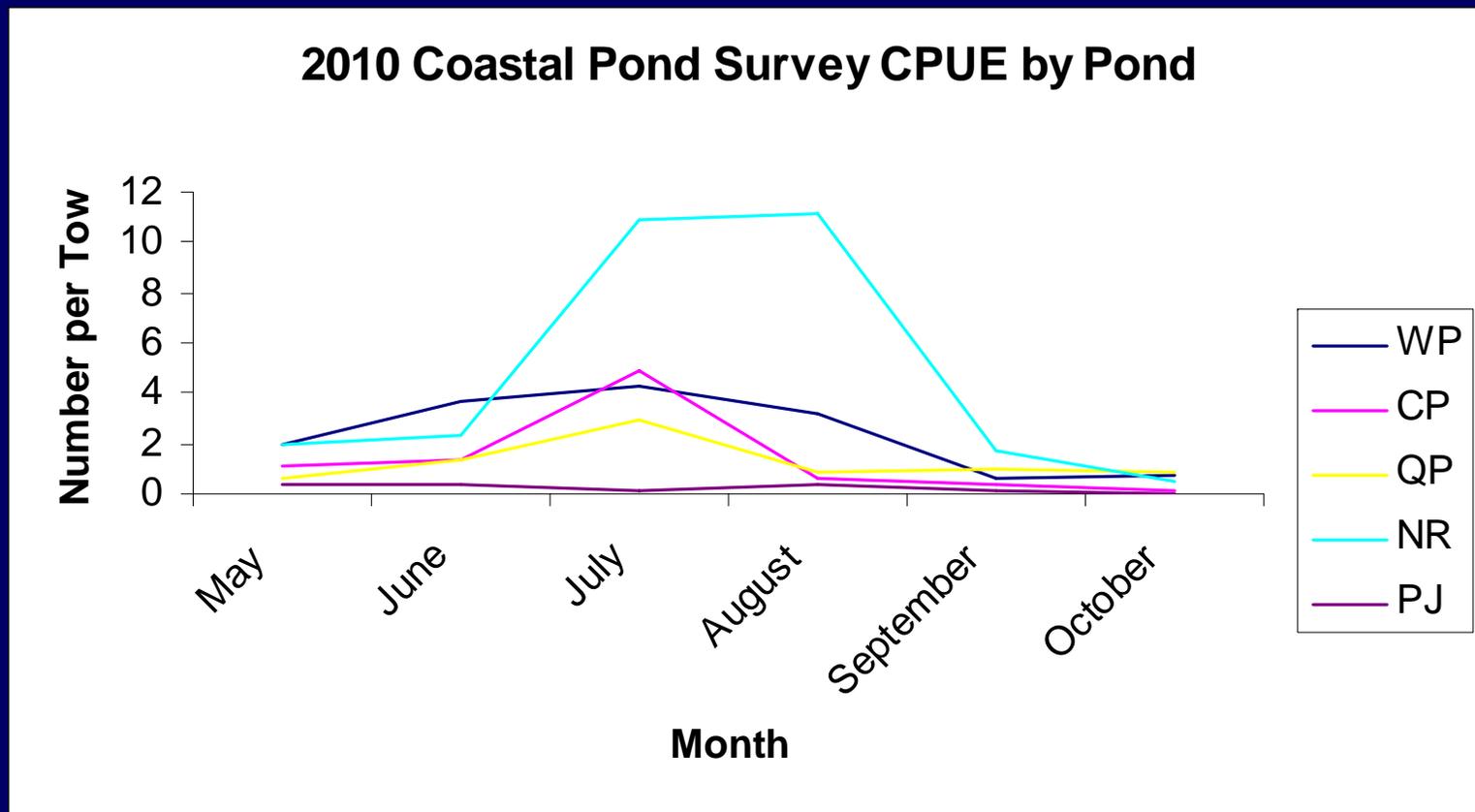
- Mount Hope Bay
- Coastal Ponds



Coastal Pond Survey Indices for Winter Flounder

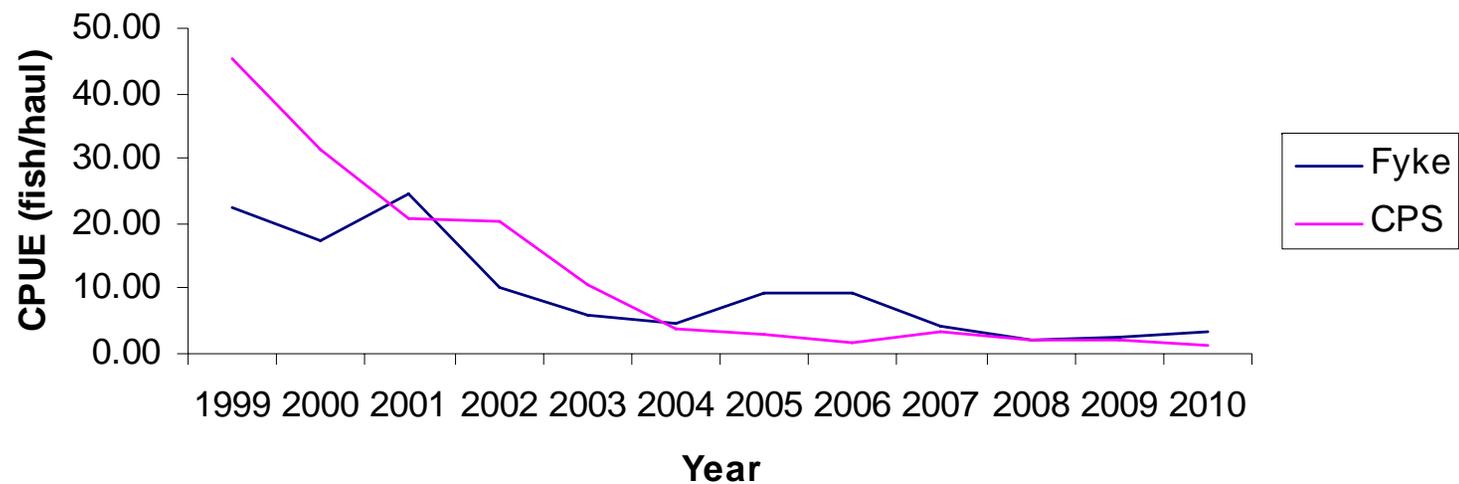


2010 Coastal Pond Survey Indices for Winter Flounder



Point Judith Pond Survey Indices for Winter Flounder

CPUE of Winter Flounder from RIDFW Fyke Net and Seine Survey in Point Judith Pond



Other Factors Effecting Winter Flounder Mortality

- Predation
- Habitat





Thank You – any questions?



Salt Pond Winter Flounder Fishery Issue Paper

Mark Gibson
RI Division of Fish and Wildlife
Marine Fisheries Office, Jamestown RI
March 2010

Introduction- Fishermen in southern New England have recently expressed interest in restoration of and gear research projects for winter flounder (*Pseudopleuronectes americanus*). The species has supported an important commercial and recreational fishery in Rhode Island for many years (Perlmutter 1947, Olsen and Stevenson 1975) and they once dominated the finfish assemblage in Narragansett Bay (Oviatt and Nixon 1973). Abundance of the species is currently low relative to long-term levels. The species along the US Atlantic Coast exists as a series of discrete spawning units that exhibit fidelity to natal estuaries (Lobell 1939, Saila 1961, Powell 1989, Phelan 1992). The fidelity is so site specific that unique juvenile populations can be genetically discriminated in Narragansett Bay and Long Island Sound at small geographic scales (Crivello et al. 2004, Buckley et al. 2008). This attribute is strongly adaptive allowing for tailoring of life history to local conditions. However, it also renders the species vulnerable to local extinctions if intensive fisheries are prosecuted on end of the line, aggregated spawners. Maintenance of spatial complexity may be very important to the long-term persistence and fishery sustainability of marine fish stocks (Reich and Dealteris 2009).

Stock Status- Winter flounder are assessed at a metapopulation level with Rhode Island falling into the southern New England- mid Atlantic stock complex area. The last groundfish assessment review (GARM III) convened by

the National Marine Fisheries Service (NMFS) indicated that this stock complex was at very low abundance and subject to overfishing (NEFSC 2008). Locally, winter flounder abundance is well below the long-term average (Figure 1). Fishery landings are also low, particularly recreational that has essentially collapsed to zero (Figure 2). Collie et al. (2008) have shown that low abundance of winter flounder and other boreal species in Rhode Island is related to warming water in addition to overfishing. Nye et al. (2009) have shown that re-distribution of fish stocks including winter flounder is happening on scales as large as the US continental shelf. These two findings suggest that rebuilding winter flounder to former levels may not be possible and that remnant stocks will be more vulnerable to overfishing and other stressors.

Management jurisdiction over the species is vested in the New England Fishery Management Council (NEFMC) in federal waters and in the Atlantic States Marine Fisheries Commission (ASMFC) in state waters. Managers have responded to the stock crisis in federal waters with a fishery closure and possession ban. In state waters, possession limits have been reduced to by catch levels. In Rhode Island, a 50 lb year round commercial limit and 2 fish recreational limit with spring and fall 30-day seasons are in place. The interest of industry in joint restoration of and research programs on winter flounder is laudable and desirable. The Division is interested in collaboration and will act as an advisor to the state's Commercial Research Foundation (CRF). Still, there are some short-term issues to be addressed.

Statement of Problem- RIDFW conducts a winter flounder monitoring program specific to Pt Judith pond. It is one of Rhode Island's coastal salt ponds and supports a well known winter flounder population (Perlmutter 1947, Gibson 1987, Crawford and Carey 1985). Saila (1961) showed that coastal salt pond winter flounder were discrete reproductive units warranting special management attention. The tagging studies show that adult winter flounder move into this pond in the fall and winter for spawning and then leave in the spring to reside in the area from Block Island to Martha's Vineyard. Juveniles remain in the pond during the summer.

The RIDFW beach seine survey of juveniles and fyke net survey of adults both show that the Pt Judith population has fallen to very low levels (Figure 3). A plot of juvenile production vs. the spawning stock that produced them indicates that there is no compensatory ability left in the population (Figure 4). That is, declines in spawner abundance lead to linear declines in juvenile abundance. There is no “surplus” production available to support fisheries. The last two data points (the 2008 and 2009 year classes) are dangerously close to the origin. The population is in danger of extinction. Given the species known stock complexity, genetic diversity, and reliance on discrete spawning units for long-term persistence; this particular component should be afforded maximum protection immediately. Consideration should be given to close this salt pond and all others to fishing for winter flounder.

Given that rule making has already been conducted in 2010 to comply with ASMFC plan requirements, an emergency rule may be needed. Under current regulations, the 2010 recreational fishery is scheduled to open in the pond on the fourth Saturday of April (24th). The commercial fishery is open year-round under the 50 pound limit. Action prior to the spring recreational season would be most effective.

Possible Responses-

1. Status quo while continuing compliance with ASMFC plan. Track performance of ASMFC and NEFMC rebuilding plans.
2. Close state salt ponds and other estuarine waters via emergency rule.
3. Develop management recommendations for and begin process for 2011 state waters fishery specifications.

Literature Cited

Collie, J.S., A.D. Wood, and H.P. Jeffries. 2008. Long-term shifts in the species composition of a coastal fish community. *Can. J. Fish. Aquat. Sci.* 65: 1352-1365.

Crawford, R. and C. Carey. 1985. Retention of winter flounder larvae within a Rhode Island salt pond. *Estuaries* 8(2B): 217-227.

Gibson, M.R. 1987. Preliminary assessment of winter flounder, *Pseudopleuronectes americanus* stocks in Rhode Island waters. RI Division of Fish and Wildlife. Research Reference Document. 87/7.

Lobell, M.J. 1939. A biological survey of the salt waters of Long Island, 1938. Report on certain fishes. Winter flounder (*Pseudopleuronectes americanus*). 28th Annual Rep. N.Y. State Cons. Dept., Suppl., Pt. I:63-96.

Northeast Fisheries Science Center (NEFSC). 2008. Assessment of 19 Northeast Ground fish Stocks through 2007. Northeast Fisheries Science Center Reference Document 08-15.

Nye, J.A., J.S. Link, J.A. Hare, and W.J. Overholtz. 2009. Changing spatial distribution of fish stocks in relation to climate and population size on the northeast United States continental shelf. *Mar. Ecol. Prog. Ser.* 393: 111-129.

Oviatt, C.A. and S.W. Nixon. 1973. The demersal fish of Narragansett Bay: an analysis of community structure, distribution and abundance. *Estuarine and Coastal Marine Science* (1973) 1:361-378.

Perlmutter, A. 1947. The blackback flounder and its fishery in New England and New York. *Bull. Bingham Oceanogr. Collect., Yale Univ.* 11(2).

Phelan, B.A. 1992. Winter flounder movements in the inner New York bight. *Trans. Am. Fish. Soc.* 106: 131-139.

Powell, J.C. 1989. Winter flounder tagging study, 1986-1988 with comments on movements. Rhode Island Division of Fish and Wildlife. Res. Ref. Doc. 89/3.

Reich, D.A., and J.T. DeAlteris. 2009. A simulation study of the effects of spatially complex population structure for Gulf of Maine Atlantic cod. *N. Amer. J. Fish. Mgt.* 29(1): 116-126.

Saila, S.B. 1961. A study of winter flounder movements. *Limnol. Oceanogr.* 6(3): 292-298.

Fig.1- Winter Flounder Abundance in the RIDFW Spring Trawl Survey in Narragansett Bay and RI Coastal Waters, 1979-2009

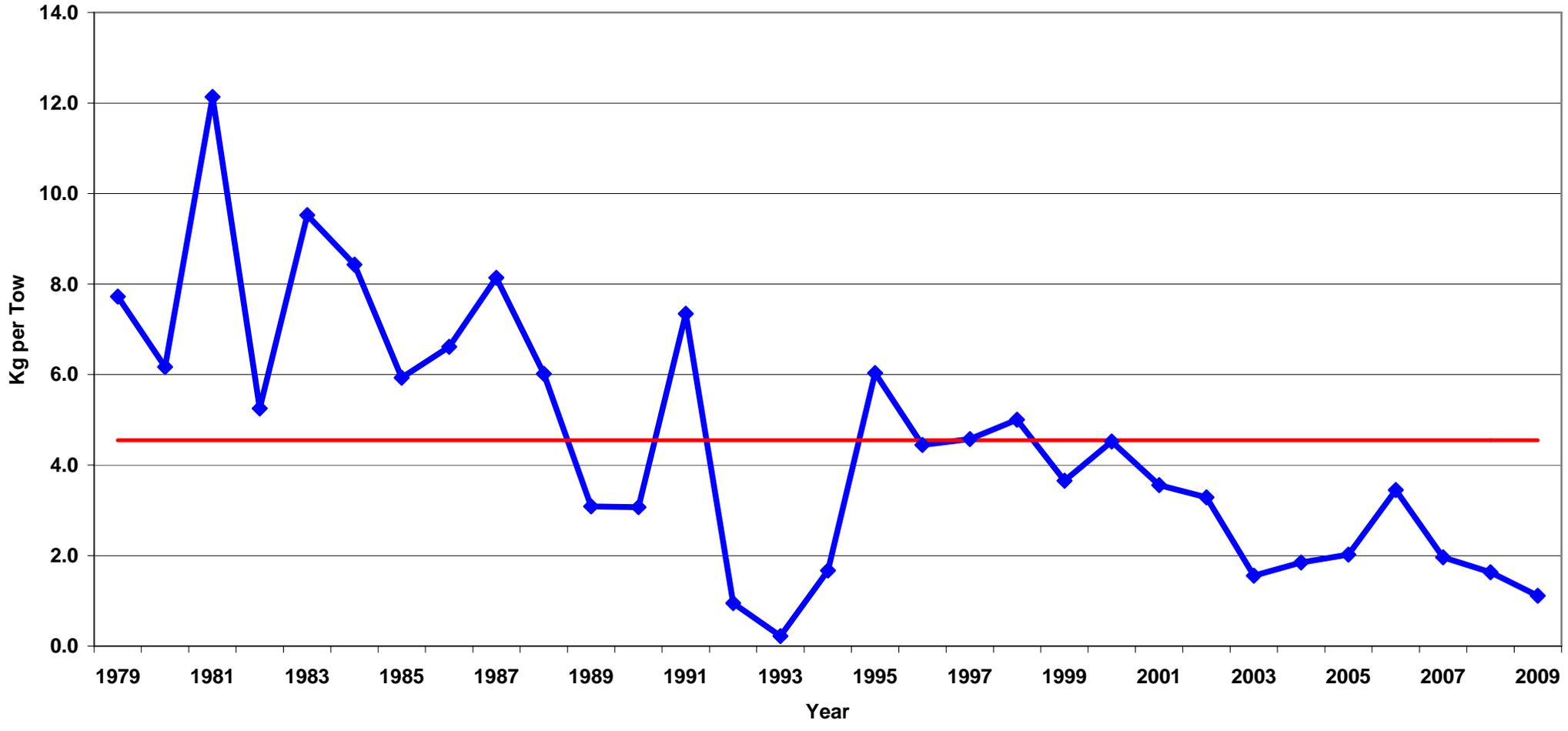


Figure 2- Rhode Island Landings of Winter Flounder

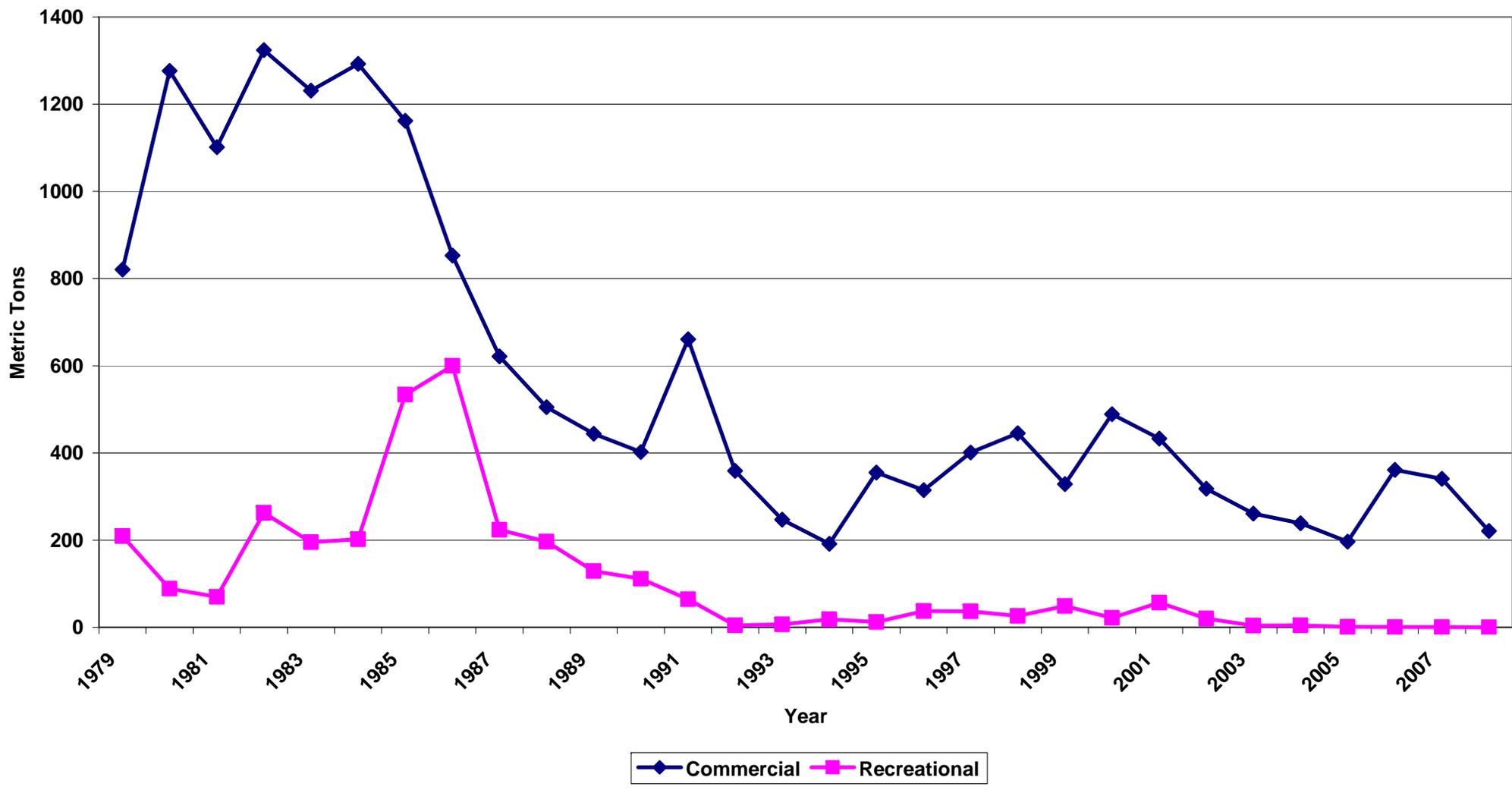


Figure 3- Abundance of Winter Flounder in Pt. Judith Pond from RIDFW Surveys

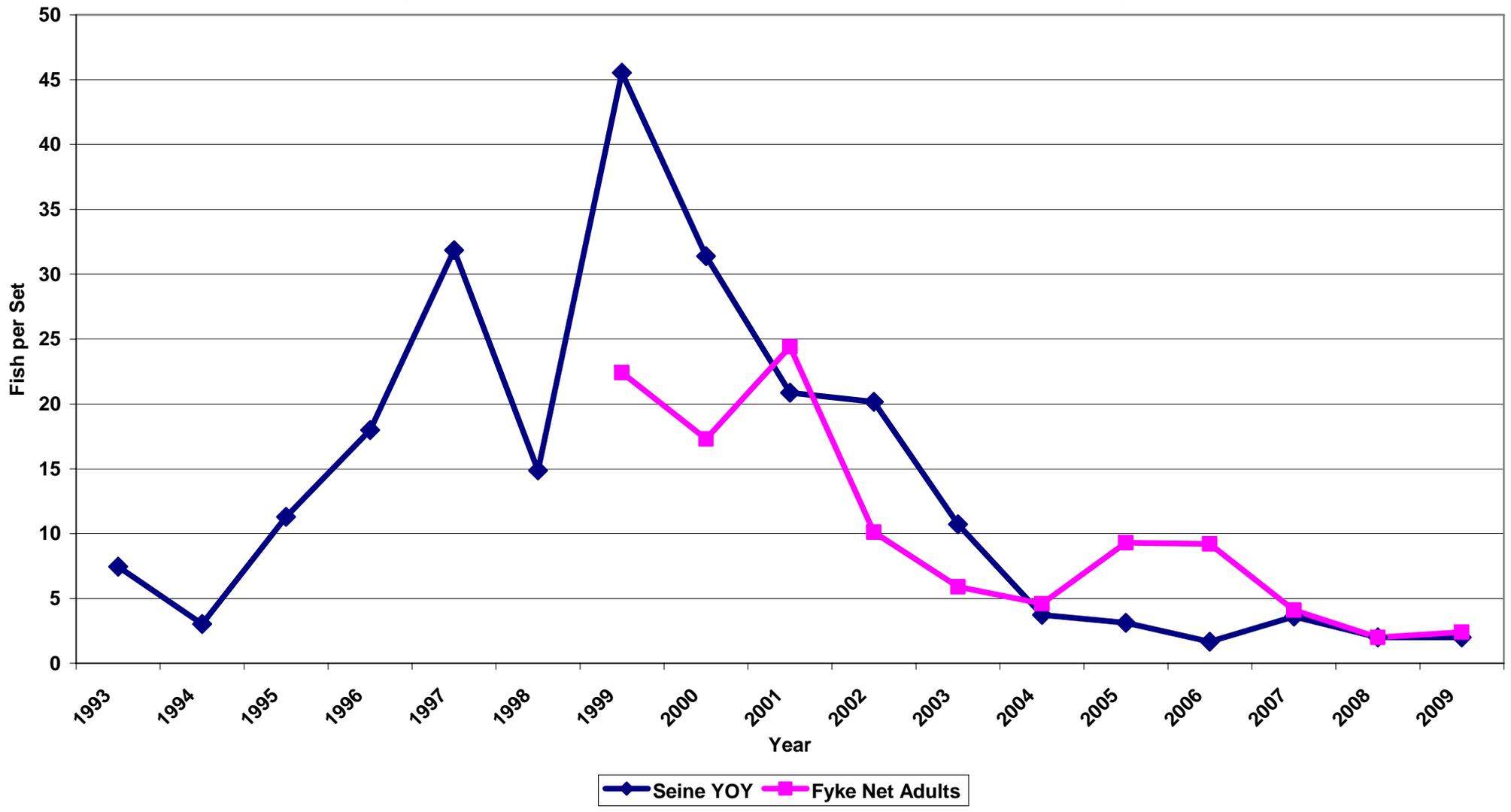


Figure 4- Pt Judith Pond YOY Winter Flounder Abundance vs. Spawner Abundance

