H&G Workgroup Atka mackerel proposals

H&G Workgroup Proposal for Daily Harvest Limits under management of mackerel fishery by cooperatives

- **Brief Statement of Proposal:** We propose to adjust the regulations affecting the Central Aleutian Islands sub-area Atka mackerel fishery to create more effective management of daily catch rates to increase sea lion protections. With this increased protection via inter-cooperatve management of daily mackerel catch amounts, certain very restrictive elements of current SSL management measures are unneeded and therefore we propose they be removed. The actual elements of this proposal are: Inter-cooperative agreements established via Amendment 80 fishing cooperatives that will regulate daily harvest rates for mackerel in AI sub-area 542 SSL CH not to exceed 600 MT of mackerel catch per day. Inside CH mackerel fishing in AI sub-area 542 will by the regulations from this proposal only be available to vessels participating in Amendment 80 coops and the inter-cooperative agreements established to implement this proposal. The non-AFA CV fishery (up to x% of the mackerel TAC in sub-area 542) can access 542 CH fishing only if a separate but equally effective mechanism to control daily harvest rates is in effect. Under this proposal, A and B season mackerel TAC management is continued but inside/outside CH mackerel TAC splits (currently 60%, 40%) (are adjusted to 70%, 30%) removed. Current restrictions on concurrent inside CH mackerel and cod fishing west of 178 degrees West longitude regulations are also removed. If Amendment 80 mackerel fleet unable to establish binding agreements to guarantee daily harvest rate limits for AI sub-area 542 (agreements meeting NMFS' requirements), then management measures for 542 CH mackerel fishing default to current measures.

Table IV-1. Continued.

Category	Conservation Measure	Specific action	Guideline	Pollock			Atka Mackerel	
				EBS Trawl	GOA Trawl	AI Trawl	BSAI trawl	
Regulatory	Spatial overlap - area closed to fishing	0-3 nm 0-10 nm 10-20 nm >20 nm, Foraging Critical habitat	100% 75% 50% Qualitative 50%	100% 93% 60% 45% 58%	100% 85% 48% 0% 57%	100% 100% 100% 100% 100%	100% 78% 45% 100% 58%	T 1
	Temporal overlap	Seasonal closures	Winter closure	Winter closure from Nov. 1 to Jan. 20	Winter closure from Nov. 1 to Jan. 20	Winter closure from Nov. 1 to Jan. 20	Winter closure from Nov. 1 to Jan. 20	T
	Localized depletions	Seasonal distribution	Two seasons, 50/50	Two season split: 1/20 to 6/10 (40%); 6/10 to 11/1 (60%)	Four season split: 1/20 to 2/25 (25%); 3/10 to 5/31 (25%), 9/25 to 9/15 (25%), 10/1 to 11/1 (25%)	Two season split: 1/20 to 6/10 (40%); 6/10 to 11/1 (60%)	Two season split: 1/20 to 4/15 (50%); 9/1 to 10/31 (50%)	T
		CH catch limits	Appropriate to provide catch in proportion to biomass inside critical habitat	SCA limit within A season at 28% of the annual TAC before April 1, the remaining 12% is available within the SCA prior to June 10.	None	No fishing inside critical habitat	60% of the seasonal apportionment of TAC can be harvested from critical habitat	T
Performance	Observed change in fishing spatial patterns from 1999	Percent catch in CH areas	Green = >25% decrease, Yellow = <25 decrease or no change, Red = increase	Slight increase in 3-10, 255% increase in 10-20 and a 48% overall increase in CH	Decreases in all zones of CH of between 20-34%	N/A	Down 77% in 3-10, up 11% in 10-20, and down 12% overall	T F 3
	Observed change in fishing temporal patterns from 1999		Green = <40% first quarter, Yellow = ~40-50% in first quarter, Red = >50% in first quarter	Similar pattern for the last 4 years, roughly 40% in first quarter, and 50% in the third quarter.	Catch dispersed among three seasons, about 40% in the first quarter in 2002	N/A	Seasonally dispersed fishery, reduction in average daily catch and the maximum daily catch by about 30%	T 4
	Catch rates in critical habitat	0-10 nm	Green = substantial reductions and lower than annual in CH areas, Yellow = no change or about equal to annual in CH, Red = increases or greater than annual rate in CH areas	Increases in catch rate in all seasons, primarily due to Catch off St. George Island, but still very low Catch rate overall in this area	Substantial reduction	N/A	Lower rates in winter and summer, substantially below the annual rate	T
		10-20 nm		Large increases in rates from 99-02, rates equal to or higher than the annual rate	Substantial reduction	N/A	Increases of about 2-3% in both winter and summer rates, and overall. Rates were above the annual rate slightly.	
		Foraging area		Increases in rates from 99-02, winter rates equal to the annual rate and much higher in the summer (triple the expected rate)	Substantial reduction	N/A	No catch.	
		Critical habitat		Increases in rates from 99-02, winter just above the annual rate and much higher in the summer and annual (double the expected rate)	Substantial reduction	N/A	Little change from 1999-2002, overall rates are similar to the annual rate.	
	Displaced fishing effort	Amount of historic fishing which was displaced by the 2001 conservation measures.	Fixed Gears: Green = >10% displacement, Yellow = 2-10% displacement, Red = 0-2% displacement --- Trawl Gear: Green >10% displacement, Yellow = 5-10% displacement, Red = <5% displacement	Only 1% of the fishery was displaced from 1999, indicating that fishery closures did little to decrease the historic fishing areas. In other words, areas were closed that the fishery did not use in 1999.	10% of the fishery was displaced from 1999 and 52% from 1998, indicating that fishery closures did have an impact in closing traditional fishing grounds close to shore.	There has been no fishing in critical habitat since 1999, therefore 100% has been displaced. In 1991, 74% of the catch was removed from critical habitat, so this represents the amount of traditional fishing which has been foregone, and is substantial.	Traditional fishing areas have been substantial, 18% of the 1999 fishery was displaced and 89% of the fishery was displaced since 1991 indicating that the cumulative closures over the last decade has had a significant impact on the fishery.	T

June 2003 - Final Supplement Section IV – Jeopardy and Adverse Modification

SUPPLEMENT TO THE

Endangered Species Act – Section 7 Consultation

Biological Opinion and Incidental Take Statement

of October 2001

Agency:	National Marine Fisheries Service Alaska Region, Sustainable Fisheries Division
Activities Considered:	Authorization of Bering Sea/Aleutian Islands groundfish fisheries based on the Fishery Management Plan for the Bering Sea/Aleutian Islands Groundfish as modified by amendments 61 and 70; and Authorization of Gulf of Alaska groundfish fisheries based on the Fishery Management Plan for Groundfish of the Gulf of Alaska as modified by amendments 61 and 70. Parallel fisheries for pollock, Pacific cod, and Atka mackerel, as authorized by the State of Alaska within 3 nm of shore.
Consultation By:	National Marine Fisheries Service Alaska Region, Protected Resources Division

Issued: 19 June 2003

Approved by: _____

From: June 2003 - Final Supplement Section IV – Jeopardy and

Adverse Modification

- *Question 7 - overlap with temporally/spatially concentrated fisheries*
  Reducing competitive interactions between groundfish fisheries and Steller sea lions that result from the temporal and spatial concentration of prey removals is also a viable approach and was a component of the conservation measures adopted by NOAA Fisheries in 2001. The intention of these measures was to disperse the fishery removals in time and space, thereby reducing the likelihood that fisheries would reduce the availably of prey for Steller sea lions (i.e., cause localized depletions). The conservation measures use a variety of tools to temporally, and in some cases spatially, allocate groundfish TAC in order to reduce the intensity of fishing effort in a particular season.

June 2003 - Final Supplement Section IV – Jeopardy and Adverse Modification – Page 42

"The Atka mackerel fishery is the only one with legitimate catch limits which increased protection for Steller sea lions beyond what was in place in 1998. For Atka mackerel, only 60% of the annual TAC can be harvested from critical habitat; the limit was actually 70% under the 2000 BiOp based on estimates of the amount of biomass in critical habitat due to the narrow shelf in the Aleutian Islands."

Table 1.

Atka Mackerel in Atka Mackerel target - Critical Habitat Average and High in A and B Seasons, 2003-2006

		2003			2004		
		CH Avg	CH High	No. of days above 600 mt	CH Avg	CH High	No. of days above 600 mt
542	A Season	480	877	3 of 12	326	474	0 of 18
	B Season	465	736	3 of 14	416	658	2 of 18
543	A Season	403	680		347	387	
	B Season	418	474		178	304	

		2005			2006		
		CH Avg	CH High	No. of days above 600 mt	CH Avg	CH High	No. of days above 600 mt
542	A Season	379	604	1 of 22	398	509	0 of 19
	B Season	495	738	5 of 18			
543	A Season	227	327				
	B Season	74	106				

Weekly catch rates for Atka mackerel in Central AI

ACCOUNT	WEEK END DATE	METRIC TONS
Aleutian Islands Central Atka mackerel	21-Jan-06	1533
Aleutian Islands Central Atka mackerel	28-Jan-06	4210
Aleutian Islands Central Atka mackerel	4-Feb-06	4541
Aleutian Islands Central Atka mackerel	11-Feb-06	4265
Aleutian Islands Central Atka mackerel	18-Feb-06	4396
Aleutian Islands Central Atka mackerel	11-Mar-06	6
Aleutian Islands Central Atka mackerel	8-Jul-06	6
Aleutian Islands Central Atka mackerel	2-Sep-06	109
Aleutian Islands Central Atka mackerel	9-Sep-06	7040
Aleutian Islands Central Atka mackerel	16-Sep-06	6536
Aleutian Islands Central Atka mackerel	23-Sep-06	4288

Eastern AI weekly catch rates Winter 2007

Eastern Aleutian Islands Bering Sea Atka mackerel Other Gear	6-Jan-07	2
Eastern Aleutian Islands Bering Sea Atka mackerel Other Gear	13-Jan-07	2
Eastern Aleutian Islands Bering Sea Atka mackerel Other Gear	20-Jan-07	948
Eastern Aleutian Islands Bering Sea Atka mackerel Other Gear	27-Jan-07	4468
Eastern Aleutian Islands Bering Sea Atka mackerel Other Gear	3-Feb-07	4016
Eastern Aleutian Islands Bering Sea Atka mackerel Other Gear	10-Feb-07	69
Eastern Aleutian Islands Bering Sea Atka mackerel Other Gear	17-Feb-07	57

H&G Workgroup proposal to adjust TEZ at Seguam Pass

- **Brief Statement of Proposal:**

  We propose to reduce the size of the trawl exclusion zone (TEZ) at Seguam Pass to allow for additional mackerel fishing opportunities from 10 to 20 nautical miles outside of the Seguam Foraging Area. The TEZ at Seguam Island currently extends out 20 nm based on circles drawn from land based sites at Seguam I/Sadddlebackridge Point; Seguam/Finch Point; Seguam/South Side. The new delineation of the area open to mackerel fishing at Seguam Island based on ten mile circles from the above named SSL sites would be drawn, however, so that none of the area within the Seguam Foraging Area would be reopened. The reason we believe that our proposed modification of the TEZ at Seguam would not negatively affect SSL foraging opportunities is that the NMFS AFSC FIT unit has extensively studied the movements, mixing rates, and biomass levels of Atka mackerel at Seguam Pass. The results show that mackerel tagged outside of approximately ten miles from the SSL sites mentioned above tend to stay in the offshore area and mackerel tagged inside of 10 miles tend to stay in the inside area. The largest component of the mackerel biomass at Seguam Island is the inside area more proximate to the SSL sites listed above. So based on the FIT mackerel study, fishing on the outside component should not have any measurable effect on the main component of the mackerel at Seguam Island. Additionally, we propose a tradeoff of increasing the SSL TEZ protection area in AI sub-area 543 where SSL counts have continued to show problems. The tradeoff would be to increase the TEZ at Buldir Island from 15 to 20 nautical miles and to increase the TEZ at Wrangle Point (Attu) from 10 to 20 nm.

H&G Workgroup proposal to adjust TEZ at Seguam Pass (continued)

- **Objectives of Proposal (What is the problem?):** Our objective is to use available scientific information to provide additional fishing grounds for the 541 mackerel fishery without impacting SSL foraging opportunities for juveniles and females with pups located in the sites in the southern portion of Seguam Island. The additional area for the mackerel fishery will accommodate the expected increase in 541 mackerel effort from Amendment 80 vessels and as well as from other sectors, such as the Adak catcher vessel fleet.

BS/AI Atka mackerel ABC and TAC by Sub-Area 2005-2007

2007				
	ABC	**74000**	**TAC**	**63000**
	E	**23800**	**E**	**23800**
	C	**29600**	**C**	**29600**
	W	**20600**	**W**	**9600**
2006				
	ABC	**110000**	**TAC**	**63000**
	E	**21780**	**E**	**7500**
	C	**46860**	**C**	**40000**
	W	**41360**	**W**	**15500**
2005				
	ABC	**124000**	**TAC**	**63000**
	E	**24550**	**E**	**7500**
	C	**52830**	**C**	**35500**
	W	**48620**	**W**	**20000**

H&G Workgroup proposal to adjust TEZ at Seguam Pass (continued)

- **Foreseeable Impacts of Proposal (Who wins, who loses?):** The 541 Atka mackerel fishery (both Amendment 80 and non-Amendment 80 vessels) will benefit from this adjustment in the TEZ. Based on information from the NMFS' tagging studies, this benefit can be obtained with little effect on the inshore prey base at Seguam Island. The compensating additional closures at Buldir Island and Attu (Wrangle point) we propose will benefit SSL's if mackerel fishing can potentially affect SSL foraging opportunities. The effect is that SSLs are not negatively affected by the reduced TEZ at Seguam and may benefit from increased protection at Buldir and Attu, part of the AI 543 sub-area where SSL declines have been the steepest. (Note April 07: alternative Western AI real estate swaps would be considered)

Progress Report: Atka mackerel biomass and movement relative to trawl exclusion zones in the Aleutian Islands

S.F. McDermott, E. Logerwell and J. Ianelli
Fishery Interaction Team (FIT)
Alaska Fisheries Science Center

OBJECTIVE: "The objective of this project is to evaluate the efficacy of trawl exclusion zones (TEZs) at maintaining sufficient quantities of Atka mackerel prey for Steller sea lions (SSL) in the Aleutian Islands."

RESULTS FOR SEGUAM PASS: "The results suggest that TEZs in Seguam and Tanaga Passes, where Atka mackerel biomass is relatively high and movement is relatively low, may be effective at preserving local foraging areas for SSL."

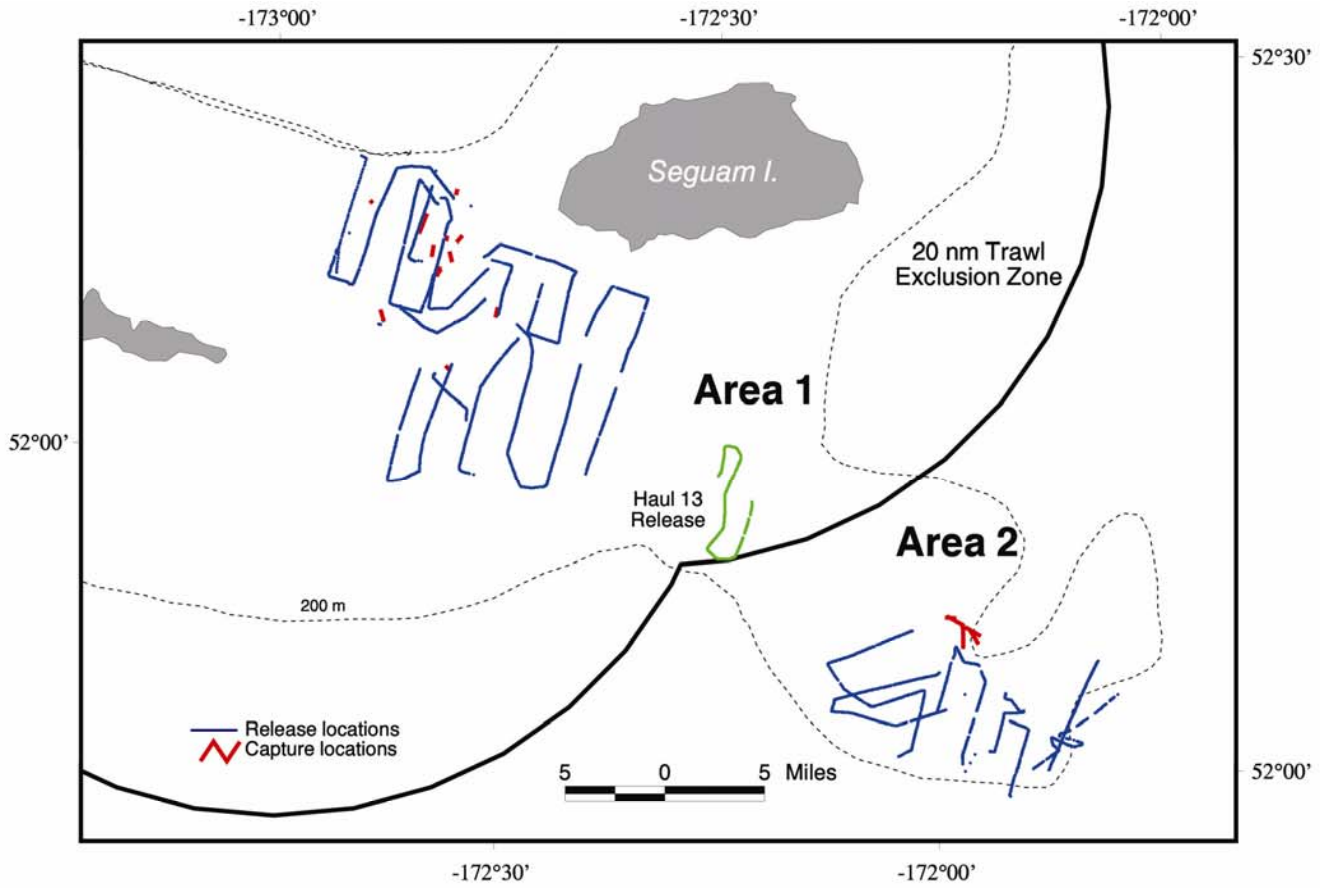

Figure 1. Capture and release locations of tagged fish in Seguam Pass in 2000. Capture locations of the fish to be tagged are in red, transects along which tagged fish were released into the water are shown as a series of blue points, except for haul 13 which is shown in green.

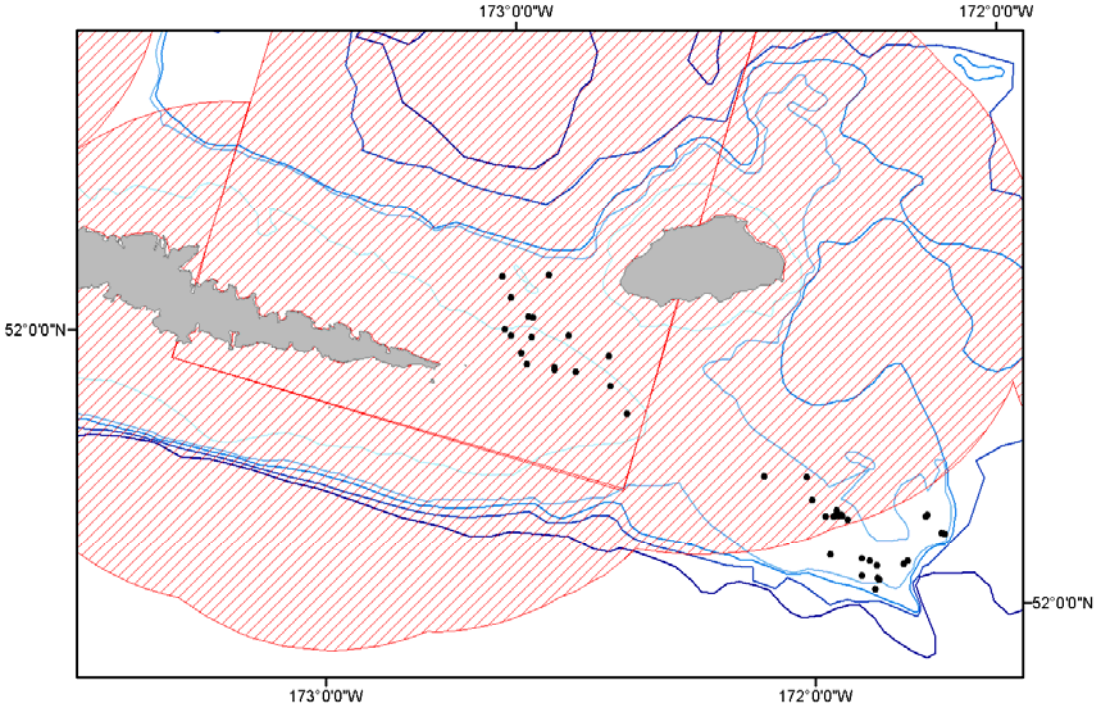

Figure 2. Capture and release locations for tagged fish in Seguam Pass in 2002. Points show mid-point of hauls. Tagged fish were released within 1 nautical mile of the capture location. Red-hatched areas indicate the 20-nautical mile trawl exclusion zones.

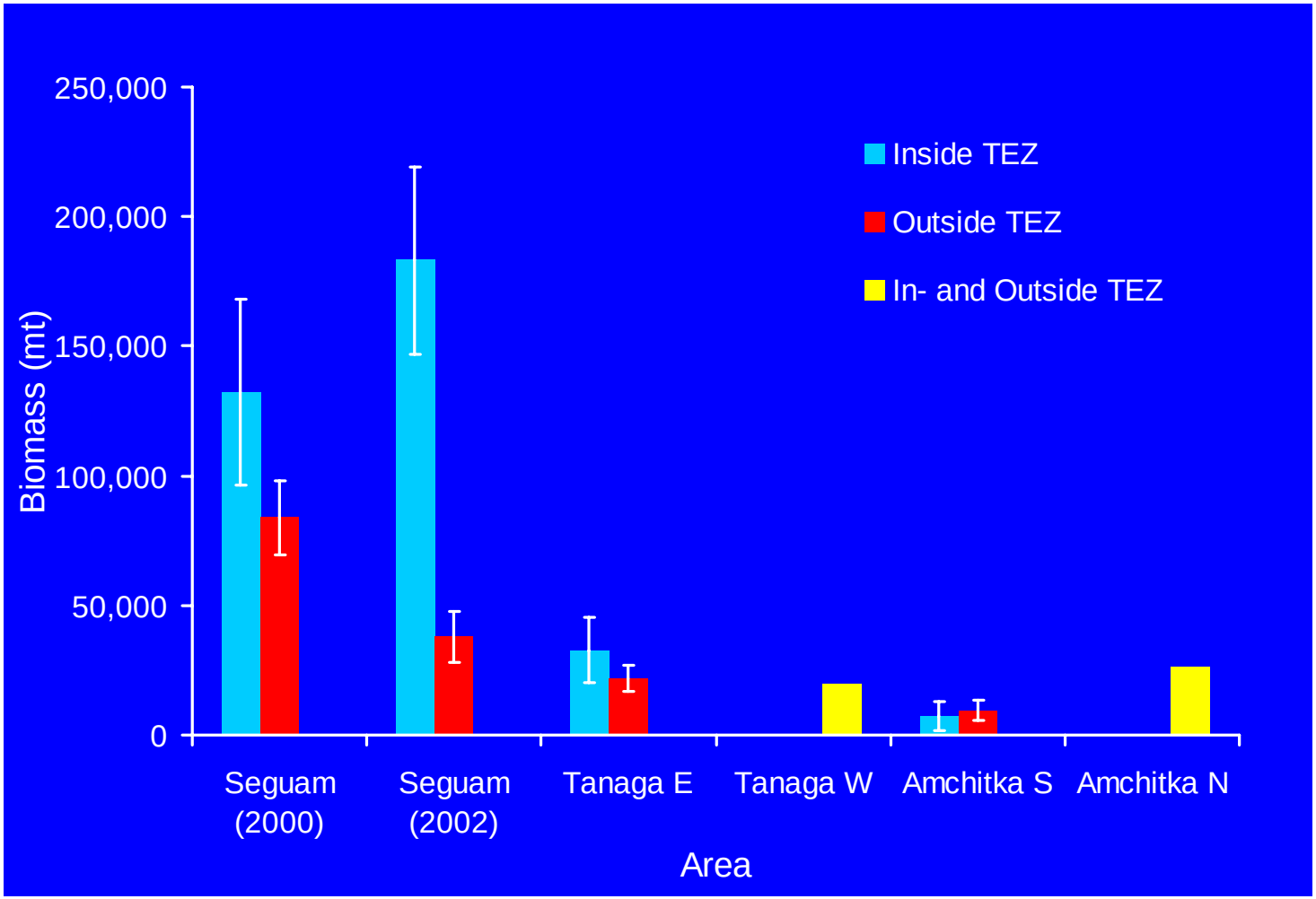

Figure 5. Tagging model estimates of Atka mackerel biomass in the three study areas. Biomass estimates for inside and outside the trawl exclusion zones (TEZ) are shown, with standard deviations. Biomass estimates for Tanaga W and Amchitka N are based on a Peterson model estimate made for inside and outside TEZ areas combined.

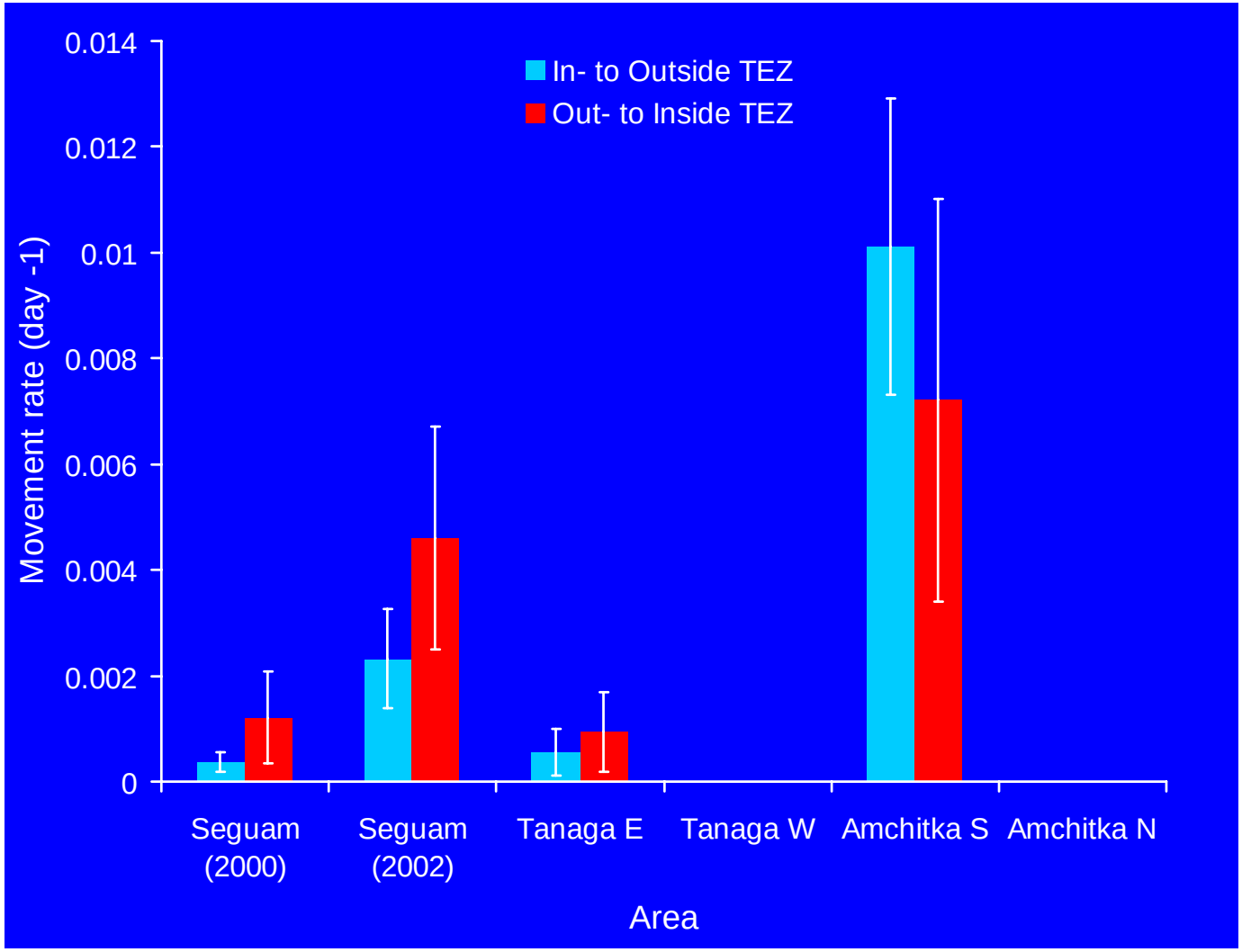

Figure 6. Tagging model estimates of Atka mackerel daily movement rate in the three study areas. Movement estimates for inside and outside the trawl exclusion zones (TEZ) are shown, with standard deviations. No movement rates were estimated for Tanaga W and Amchitka N.