

# Spatial and temporal variation in the diet of Steller sea lions in the Kodiak Archipelago, 1999 to 2005

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**Appendix 1.** *Eumetopias jubatus*. Percentage relative occurrence (RO) of primary prey ( $\geq 10\%$  FO in at least 1 collection) identified in Steller sea lion scat collected from the Kodiak Archipelago (1999 to 2005): (A) northern region, (B) eastern region, (C) western region, and (D) southern region. Total numbers of scats containing identifiable prey are indicated in bold: N = 1225 (A), 807 (B), 528 (C), and 200 (D). Data for collections with <23 scats have been left blank due to biases associated with sample size. The presence of a prey type in collections of small sample size is indicated by an asterisk

Prey type	1999		2000		2001		2002		2003		2004		2005					
	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Fall	Spring		
<b>(A) Northern region</b>																		
<b>Number of scats</b>	<b>27</b>	<b>119</b>	<b>52</b>	<b>73</b>	<b>38</b>	<b>110</b>	<b>55</b>	<b>77</b>	<b>203</b>	<b>28</b>	<b>51</b>	<b>34</b>	<b>177</b>	<b>48</b>	<b>75</b>	<b>12</b>	<b>46</b>	
Pacific sand lance	2.6	18.2	11.7	7.7	7.1	17.9	15.9	5.4	17.7	18.4	14.6	9.8	11.5	8.3	3.5	*	11.0	
Walleye pollock	12.8	12.5	8.0	2.0	9.5	4.6	4.0	0.0	9.7	2.3	8.6	2.2	13.2	8.3	1.2	*	2.2	
Arrowtooth flounder	34.6	13.6	16.6	11.7	13.1	9.8	17.2	30.2	12.3	12.6	7.9	6.5	8.9	6.8	17.4	*	30.8	
Pacific cod	2.6	11.4	7.4	3.1	6.0	11.9	10.6	4.5	7.8	8.0	17.2	3.3	14.1	26.5	2.9	*	3.3	
Pacific salmon	10.3	1.4	8.0	11.7	26.2	11.9	5.3	12.9	14.2	12.6	3.3	29.3	14.3	6.8	27.3		9.9	
Pacific herring	7.7	0.4	16.6	7.1	2.4	2.5		16.3	10.6	2.3	2.0	10.9	5.2	9.8	8.1	*	5.5	
Irish lord, unidentified		10.4		1.0	6.0	8.1	5.3		4.1		4.0	2.2	1.7	1.5	0.6		3.3	
Gadids, unidentified	5.1	3.6	1.2	2.6	4.8	3.8		1.5	2.8	4.6	2.0	3.3	3.7	3.0	1.2		4.4	
Pacific sandfish				2.4	0.2	0.7			1.1	1.1	2.0		2.4		0.6		1.1	
Smelt, unidentified	5.1	0.7	0.6	4.6	2.4	2.3	2.0	12.9	4.7		1.3	8.7	2.3	1.5	15.1	*	1.1	
Flatfish, unidentified	1.3	2.9	1.2	1.0		1.5	2.6	1.5	2.2	3.4	3.3		2.6	2.3	1.7		1.1	
Capelin	11.5	1.4	9.2	31.6	6.0	1.3	0.7	7.4	0.9		0.7	13.0	0.5	0.8	9.9	*		
Polychaete worm	1.3	2.1	7.4			2.3	3.3	1.0	0.9	6.9	2.0	2.2	1.4	5.3	4.1			
Rock sole		1.4	0.6		7.1	0.8	2.0		0.5		6.6		0.5	3.0			5.5	
Snailfishes, unidentified		3.6				3.1	7.9		0.3	3.4	4.0		1.2	3.0				
Skates	2.6	2.9	1.2	2.0		1.5	1.3		0.9		1.3		2.8	2.3	0.6	*	2.2	
Sculpins, unidentified		2.1	1.8		1.2	1.3	0.7		0.8	1.1	1.3		1.2	0.8				
Rockfish		1.4	1.2		2.4	2.5	4.0		0.5	10.3	1.3		2.8	0.8	0.6		1.1	
Smooth lump sucker									0.0									
Pacific halibut			2.5	6.6		0.8	1.3	2.0	0.5	1.1	1.3	4.3	1.2		2.3	1.7	*	5.5
<i>Hexagrammos</i> spp.	2.6	0.4				2.3	0.7		1.2		0.7	2.2	0.9					
Gunnel, unidentified		0.4		1.0		1.0	0.7		0.3				0.2					
Eulachon		0.4	2.5			0.2			0.5				0.2					
Lump sucker, unidentified						0.2	2.6		0.1		2.0							

## Appendix 1. (continued)

Prey type	1999		2000		2001		2002		2003		2004		2005							
	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Fall	Spring				
<b>(B) Eastern region</b>																				
<b>Number of scats</b>	<b>24</b>	<b>84</b>	<b>57</b>	<b>18</b>	<b>65</b>	<b>90</b>	<b>19</b>		<b>76</b>	<b>25</b>	<b>53</b>	<b>15</b>	<b>44</b>	<b>76</b>	<b>54</b>		<b>26</b>	<b>29</b>		<b>52</b>
Pacific sand lance	8.5	18.5	14.4	*	13.7	12.3	*		11.6	19.2	8.3	*	12.1	9.4	12.2		2.2	1.9		13.2
Walleye pollock	4.9	13.5	13.2	*	10.2	13.2	*		21.2	19.2	16.0	*	17.2	21.9	21.8		54.3	13.0		7.4
Arrowtooth flounder	17.1	7.8	15.0	*	8.6	8.4	*		7.2	7.1	5.9	*	13.1	3.6	7.1		10.9	3.7		15.2
Pacific cod	13.4	12.5	11.4	*	10.2	13.5	*		11.2	12.1	7.7	*	24.2	17.4	16.0		6.5	22.2		11.3
Pacific salmon	20.7	2.5	1.2		10.2	8.7			4.0	1.0	1.2		8.1	1.8	4.5		4.3	5.6		0.5
Pacific herring		3.1			1.6	1.2	*		0.8	4.0	1.8	*		0.4	1.9		2.2	1.9		4.9
Irish lord, unidentified	6.1	5.0	8.4		3.5	3.9	*		4.4	11.1	5.9	*		4.9	4.5		2.2	1.9		8.8
Gadids, unidentified	4.9	4.4	3.6	*	3.5	3.6			3.6	3.0	3.0	*	3.0	3.6	1.9		2.2	16.7		4.4
Pacific sandfish	4.9	3.1	6.0		3.1	2.7	*		2.0	1.0	21.3	*	1.0	2.2	1.9		2.2	3.7		2.0
Smelt, unidentified	2.4	0.6	1.2		0.8	2.7			1.6			*	3.0	0.4	0.6		4.3			1.5
Flatfish, unidentified	2.4	2.2	3.0	*	7.0	6.9	*		0.8	5.1	1.8		2.0	4.9	3.8			3.7		1.0
Capelin		0.3		*	2.3	4.5	*		0.8	1.0		*			1.9					
Polychaete worm	3.7	1.6	4.2		2.0	2.1	*		4.0	1.0	5.3			2.2	5.8		2.2	3.7		3.4
Rock sole	3.7	2.5	4.2		2.7	2.4	*		2.4	2.0	3.0	*	1.0	3.1	4.5			1.9		3.9
Snailfishes, unidentified		5.3	1.8		0.8	2.7	*		3.2	3.0	4.1		1.0	7.1	1.9			3.7		8.3
Skates	3.7	0.9		*	2.3	0.6	*		1.6	1.0	1.8		2.0	2.2	0.6			1.9		0.5
Sculpins, unidentified		1.9	2.4		3.1	2.1	*		0.8	2.0			2.0	1.3	0.6					3.9
Rockfish		0.3	1.8		3.9				0.8	1.0			3.0		0.6		2.2	3.7		2.5
Smooth lump sucker											0.6									
Pacific halibut		0.3	3.0		2.3				0.4		0.6			1.3			2.2			
<i>Hexagrammos</i> spp.	1.2	0.9	0.6		0.8	0.6	*		2.0		1.2	*		1.8	0.6			1.9		0.5
Gunnel, unidentified		2.5	1.2		0.8	1.5	*		3.2	1.0					1.9					0.5
Eulachon													1.0							
Lumpsucker, unidentified					0.6						1.8			0.4				1.9		

## Appendix 1. (continued)

Prey type	1999		2000			2001			2002				2003			2004		2005		
	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Fall	Spring
<b>(C) Western region</b>																				
<b>Number of scats</b>	<b>26</b>	<b>39</b>	<b>2</b>			<b>35</b>	<b>48</b>	<b>6</b>	<b>39</b>	<b>31</b>	<b>34</b>	<b>53</b>	<b>48</b>		<b>43</b>	<b>17</b>		<b>58</b>		<b>49</b>
Pacific sand lance	32.5	15.1	*			9.0	5.7	*	12.9	11.5	12.0	24.9	5.4		3.0	*		16.1		7.4
Walleye pollock	10.0	15.1				17.9	5.7		8.4	26.4	12.0	17.7	21.3		13.0	*		12.0		9.1
Arrowtooth flounder	7.5	6.7				4.8	9.2		7.6	2.3		6.2	12.4		4.0			7.2		2.5
Pacific cod	3.8	8.4				13.1	7.1		9.2	3.4	9.0	5.3	4.5		9.0	*		13.7		9.1
Pacific salmon	8.8		*			2.1	0.7	*	8.4			9.1	3.5		2.0	*		4.0		3.3
Pacific herring	10.0	12.3				13.8	25.5		12.0	19.5	29.0	8.1	12.4		39.0	*		14.9		36.4
Irish lord, unidentified	1.3	2.2				0.7	1.4		1.2				2.0					2.0		
Gadids, unidentified	3.8	2.8				5.5	3.5	*	1.6	3.4	7.0	1.0	4.0		3.0	*		2.4		3.3
Pacific sandfish	8.8	2.8	*			2.1	12.8	*	10.4	8.0	7.0	8.6	4.0		6.0			7.2		7.4
Smelt, unidentified						1.4		*	2.4			4.3	7.4					2.0		0.8
Flatfish, unidentified		4.5	*			2.1	0.7	*	5.2	4.6	5.0	3.3	4.0					2.8		2.5
Capelin			*					*	3.6			0.5						0.4		
Polychaete worm	2.5	5.0				6.9	2.8		3.2	6.9	2.0	3.3	2.0		2.0			4.4		2.5
Rock sole	2.5	3.9				6.9	2.8		1.6	1.1	1.0	1.4	3.0		1.0			0.8		3.3
Snailfishes, unidentified		2.2					5.7		0.4	1.1								0.4		4.1
Skates		5.0				4.1			0.4	1.1			3.0					0.8		0.8
Sculpins, unidentified	1.3	2.2				1.4	2.1	*	0.4	4.6		0.5	0.5					1.2		0.8
Rockfish	1.3								0.4									0.4		
Smooth lump sucker							0.7				6.0				5.0					
Pacific halibut									0.8				0.5							
<i>Hexagrammos</i> spp.		1.1							1.6	1.1		0.5						1.2		
Gunnel, unidentified	1.3						2.1						0.5					0.8		
Eulachon									0.4			2.4	5.4							
Lumpsucker, unidentified			*			0.7	1.4		0.4		4.0	1.0		9.0						0.8

