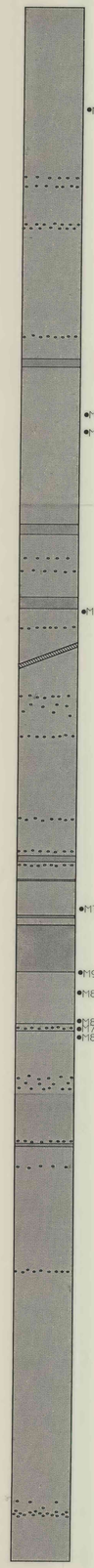
DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

OPEN-FILE REPORT 89-674
SHEET 1 OF 2

BEAR LAKE FORMATION (MIOCENE)

Milky River Section
(from Lyle, Morehouse, Palmer and Bolm, 1979)

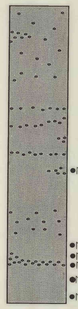


*Exact stratigraphic position uncertain

15 MILKY RIVER SECTION (MIDDLE MIOCENE)

Taxa	Locality numbers: M7189	M7190	M7191	M7192	M7193	M7194	M8168	M8169	M8170	M8171	M8172	M8173	M8174	M9091	M9092
Bivalvia:															
Acila sp. indet.						x			x						x
Anadara cf. *A. devincta* (Conrad)										x					
Chlamys cosibensis cosibensis (Yokoyama)								cf.							
Chlamys sp. indet.											x				
Clinocardium sp. indet.			?						x			x			
Cyclocardia sp. indet.	x							x	x		x				
Glycymeris sp. indet.	?														
Macoma sp. indet.								x							
Mizuhopecten mollerensis (MacNeil)								?	?		?				
Mya sp. indet.				?											
Mytilus grastacapi Allison & Addicott												x		cf.	
Mytilus sp. indet.	x														
Peronidia aff. *P. lutea alternidentata* (Broderip & Sowerby)								x							
Pododesmus sp. indet.								?							
Septifer bifurcatus (Conrad)								cf.							
Spisula albaria (Conrad)								x							
Gastropoda:															
Calyptraea sp. indet.								x							
Crepidula praerupta Dall													cf.		
Crepidula sp.						x									
Musashia sp. indet.										x					
Natica sp. indet.	?														
Neptunea lyrata altispira Gabb								?	x	x					
Neptunea lyrata (Martyn) subspecies			x	x											
Neptunea platfeeti Kanno			x												
Tyrannoberingius rex Marincovich															

Cape Aliaksin Section
(from Lyle, Morehouse, Palmer and Bolm, 1979)

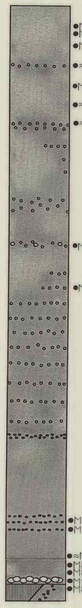


*Exact stratigraphic position uncertain

9 CAPE ALIAKSIN SECTION (MIDDLE MIOCENE)

Taxa	Locality number: M7188	M8027	M8028	M8185	M8186	M8187	M8188
Bivalvia:							
Chlamys cosibensis cosibensis (Yokoyama)	x	x	.	.	.	x	x
Gastropoda:							
Beringius hatai MacNeil	x	x	.	.	.	.	?
Mohnia sp. indet.	.	.	?	.	.	.	.
Musashia sp. indet.	.	.	.	.	?	.	cf.
Neptunea platfeeti Kanno	.	x	.	.	.	.	.
Neptunea sp. indet.	.	x	.	.	.	.	.
Patelloida grodatsa Lindberg & Marincovich	.	.	x	.	.	.	.
Tyrannoberingius rex Marincovich	.	x	x	x	.	.	.

Sandy Ridge section



* Exact stratigraphic position uncertain

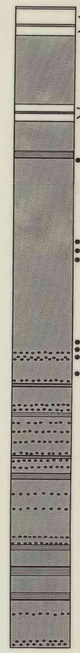
16 SANDY RIDGE SECTION (UPPER MIOCENE)

Taxa	Locality numbers: M8176	M8177	M8178	M8179	M8180	M8181	M8182	M8183	M8191	M8192	M8193	M8194	M8521	M8523	M9098	M9099	M9100	M9101	M9102
MOLLUSCA																			
Bivalvia:																			
Acila empirensis Howe	.	.	?	.	?	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Acila marujamensis Ilyina	.	.	x	.	cf.	cf.	.	.	.	.	.	.	.	x	.	.	.	.	.
Acila sp. indet.	.	x	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Astarte esquimalti Baird	.	.	.	.	?	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Chlamys sp. indet.	.	.	.	.	x	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Clinocardium meekianum (Gabb) n. subsp.?	x	.	x	.	?	x	.	.	x	.	x	x	.	.	.	.	x	x	x
Clinocardium cf. *C. pristinum* Keen	.	cf.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	cf.	.
Clinocardium sp. indet.	.	.	x	.	.	.	.	x	.	x	.	.	x	.	.	.	.	.	.
Cyclocardia sp. indet.	.	.	.	.	.	.	.	.	.	.	x	.	.	.	.	.	.	.	.
Liocyma fluctuosa (Gould)	.	.	.	.	x	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Macoma incongrua (von Martens)	.	.	x	.	.	.	.	.	.	.	.	.	cf.	.	.	.	cf.	.	.
Macoma sp. indet.	.	.	.	.	.	x	.	.	.	.	.	.	.	.	.	.	.	.	.
Mizuhopecten mollerensis (MacNeil)	x	.	.	x	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Mya truncata Linnaeus	cf.	x	x	x	x	x	x	.	.	.	.	.	.	.	x	.	.	.	.
Nuculana cf. *N. pernula* (Müller)	.	.	.	.	x	.	.	.	.	.	.	.	.	.	.	.	x	.	.
Panomya trapezoidia Strauch	.	.	x	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Periploma besshoense (Yokoyama)	.	.	.	.	.	x	.	.	.	.	.	.	.	.	.	.	.	.	.
Serripes groenlandicus (Bruguière)	.	?	x	.	x	x	.	.	.	.	.	.	.	.	.	.	.	.	.
Siliqua alta (Broderip & Sowerby)	.	.	cf.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Siliqua sp. indet.	.	.	?	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Spisula polynyma (Stimpson)	.	x	x	x	.	x	.	.	.	x	x	x	.	.	.	.	.	x	.
Yoldia scissurata Dall	.	.	x	.	x	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Gastropoda:																			
Beringius sp. indet.	.	.	?	.	x	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Buccinum petrophilum Dall	.	.	.	.	.	.	.	.	.	.	cf.	.	.	.	.	.	.	.	.
Buccinum sp. indet.	.	.	x	.	x	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Colus sp. indet.	.	.	.	.	?	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Natica clausa Broderip & Sowerby	.	.	x	.	x	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Neptunea lyrata altispira Gabb	.	.	x	cf.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Neptunea lyrata (Martyn) subspecies	.	.	x	x	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Neptunea sp. indet.	.	.	x	.	x	x	.	.	.	.	.	.	.	.	.	.	.	.	.
Polinices pallidus (Broderip & Sowerby)	.	.	x	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

BEAR LAKE FORMATION SPOT SAMPLES (MIOCENE)

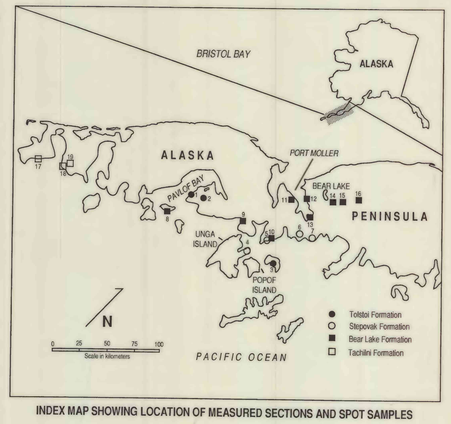
Taxa	Locality numbers: 6-UKOLNOI ISLAND M7152	M7153	M7154	10-LUMBER BAY M8329	11-STANIUKOVICH MOUNTAIN M8450	M8451	M8452	M8453	M8458	M8510	M8513	M8516	M8517	M8520	12-EGG ISLAND M8447	M8448	M8522	13-MOLLER HEAD M8512
Bivalvia:																		
Acila sp. indet.	x	.	.	x	.	.	.	x	x	.	.	.	.	x	.	.	.	.
Clinocardium sp. indet.	x	.	.	.	.	.	.	.	.	.	.	.	.	.	x	.	.	.
Lucinoma acutilineata (Conrad)	x	x	x	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Macoma optiva (Yokoyama)	x	x	x	.	.	.	.	x	.	.	.	.	.	cf.	cf.	.	.	.
Macoma sp. indet.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	x	.	.	?
Mya truncata Linnaeus	x	.	.	x	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Mya sp. indet.	x	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Mytilus grastacapi Allison & Addicott	.	x	.	.	.	.	.	.	.	.	.	.	.	.	x	.	x	.
Ostrea sp. indet.	.	x	.	.	x	x	x	.	.	x	x	.	?	.	.	.	.	.
Pandella sp. indet.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Peronidia aff. *P. lutea alternidentata* (Broderip & Sowerby)	?	.	?	.	.	.	.	x	.	.	.	.	.	.	x	.	.	.
Pitar sp. indet.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Serripes groenlandicus (Bruguière)	.	.	.	.	.	.	.	x	.	.	.	.	.	.	.	.	.	.
Spisula polynyma (Stimpson)	.	.	.	.	.	.	.	x	x	.	.	x	.	.	x	.	x	.
Spisula sp. indet.	.	.	.	.	.	.	.	.	.	.	.	.	.	x	.	.	.	.
Thracia sp. indet.	x	.	x	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Yoldia sp. indet.	.	.	?	.	.	.	.	.	.	.	.	.	.	x	.	.	.	.
Gastropoda:																		
Beringius crebricostatus (Dall)	x	x	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Buccinum sp. indet.	?	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	x
Colus sp. indet.	.	.	x	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Fusitriton oregonensis (Redfield)	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Margarites sp. indet.	.	.	.	.	.	.	.	.	.	.	.	.	.	x	.	.	.	.
Natica clausa Broderip & Sowerby	.	.	x	.	.	.	.	x	x	.	.	.	.	.	.	.	.	.
Neptunea lyrata altispira Gabb	.	alf.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Neptunea sp. indet.	x	x	x	x	.	.	.	.	.	.	.	.	.	.	.	.	.	x
Turritella saggi Kotaka	.	x	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Tyrannoberingius rex Marincovich	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Scaphopoda:																		
Dentalium cf. *D. schencki* Moore	x	x	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Bear Lake Type Section



14 BEAR LAKE TYPE SECTION (MIDDLE MIOCENE)

Taxa	Locality numbers: M7327	M7328	M8159	M8160	M8161	M8162	M8163	M8164	M8165	M8167
MOLLUSCA										
Bivalvia:										
Acila empirensis Howe	x	.	.	.	.	.	x	.	.	.
Acila sp. indet.	x	.	.	x	.	.	.	.	.	.
Chlamys cosibensis cosibensis (Yokoyama)	.	.	?	.	.	.	.	.	.	.
Chlomi cf. *C. enalfera* (Dall)	x	.	.	x	.	.	x	x	.	.
Chione sp. indet.	.	.	.	.	?	.	?	.	.	.
Clinocardium cf. *C. brooksi* (Clark)	cf.	.	.	.	.	.	.	.	.	.
Clinocardium sp. indet.	x	x	.	alf.	.	.	.	x	.	.
Cyclocardia sp. indet.	.	x	x	.	.	.	.	.	.	.
Felaniella parilis (Conrad)	x	x	.	?	.	x	.	.	.	.
Hiatella arctica (Linnaeus)	x	.	.	?	.	.	?	.	.	.
Macoma astori Dall	alf.	x	.	.	cf.	.	.	.	.	.
Macoma incongrua (von Martens)	x	.	.	cf.	.	.	cf.	.	.	.
Macoma optiva (Yokoyama)	x	.	.	.	cf.	.	.	.	.	.
Macoma sp. indet.	.	.	.	x	?	x	.	.	x	.
Mizuhopecten mollerensis (MacNeil)	x	.	.	.	.	.	.	.	.	.
Mya cuneiformis (Böhm)	.	.	.	cf.	.	.	.	.	.	.
Mya eligans (Eichwald)	.	x	.	.	.	.	.	.	.	.
Mya truncata Linnaeus	.	.	.	cf.	.	.	.	.	.	.
Mya sp. indet.	.	.	.	.	.	.	.	?	.	.
Mytilus grastacapi Allison & Addicott	?	.	.	.	.	.	.	.	.	x
Nuculana cf. *N. pernula* (Müller)	cf.	.	.	.	.	.	.	.	.	.
Nuculana sp. indet.	x	x	.	x	.	.	.	.	x	.
Peronidia aff. *P. lutea alternidentata* (Broderip & Sowerby)	.	.	.	x	.	.	x	.	.	.
Peronidia aff. *P. protovenulosa* (Nomura)	x	?	.	.	.	.	.	.	.	.
Pitar sp. indet.	.	?	.	.	.	.	.	.	.	.
Septifer sp. indet.	.	.	.	?	.	.	.	.	.	.
Siliqua oregonia Dall	cf.	.	.	.	.	.	.	.	.	.
Spisula albaria (Conrad)	cf.	.	.	.	.	.	x	.	.	.
Spisula sp. indet.	.	x	.	?	.	.	.	.	.	.
Yoldia solaxurata Dall	.	.	.	.	.	.	cf.	.	.	.
Yoldia sp. indet.	.	x	.	x	.	.	.	.	.	.
Gastropoda:										
Buccinum aff. *B. castaneum* Dall	.	x	.	.	.	.	.	.	.	.
Buccinum sp. indet.	?	.	.	.	.	.	.	.	.	.
Colus spitzbergensis (Reeve)	.	alf.	.	.	.	.	.	.	.	.
Colus sp. indet.	x	?	.	.	.	.	.	.	.	.
Crepidula princeps Conrad	x	.	.	.	.	.	.	.	.	.
Crepidula rostralis (Conrad)	cf.	.	.	.	.	.	.	.	.	.
Crepidula sp.	.	.	?	.	.	.	.	.	.	.
Margarites sp. indet.	x	.	.	.	.	.	.	.	.	.
Mohnia sp. indet.	?	.	.	.	.	.	.	.	.	.
Motyophorus sp. indet.	.	.	.	x	.	.	.	.	.	.
Natica clausa Broderip & Sowerby	x	.	.	.	.	.	.	.	.	.
Natica janthostoma Deshayes	x	.	.	.	.	.	.	.	.	.
Neptunea lyrata altispira Gabb	x	.	cf.	cf.	x	.	.	.	.	.
Neptunea sp. indet.	?	.	.	.	.	.	.	x	.	x
Polinices pallidus (Broderip & Sowerby)	x	.	.	.	.	.	.	.	.	.

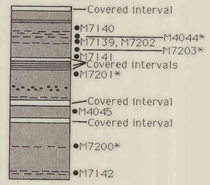


INDEX MAP SHOWING LOCATION OF MEASURED SECTIONS AND SPOT SAMPLES

TACHILNI FORMATION (MIOCENE)

Cape Tachilni
(after Marincovich, 1983)

Top of exposed section



Covered by modern beach deposits

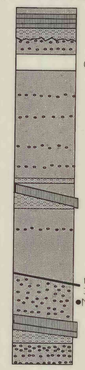
*exact stratigraphic position uncertain

18 CAPE TACHILNI SECTION (UPPER MIOCENE)

Taxa	Locality numbers: M4044	M4045	M7139	M7140	M7141	M7142	M7200	M7201	M7202	M7203
Bivalvia:										
Acila ermani (Girard)	.	.	.	x	.	.	.	.	.	.
Chlamys cosibensis cosibensis (Yokoyama)	x	.	x	?	x	.	.	.	.	.
Clinocardium meekianum (Gabb) n. subsp.?	.	.	.	x	.	.	.	x	.	.
Clinocardium cf. *C. pristinum* Keen	.	.	.	x	.	.	.	.	.	.
Clinocardium sp. indet.	.	.	x	x	.	.	x	.	.	x
Crenomytilus coalingensis (Arnold)	.	x	.	x	.	.	x	x	.	.
Cyclocardia cf. *C. roundiformis* (Ilyina)	.	.	.	x	.	.	.	.	.	.
Felaniella parilis (Conrad)	.	.	.	x	.	.	x	.	.	.
Glycymeris grewingki Dall	.	.	.	x	.	.	.	x	.	.
Macoma cf. *M. astori* Dall	.	.	.	.	x	.	.	.	.	x
Macoma sp. indet.	.	.	.	x	.	.	.	.	.	.
Mya eligans (Eichwald)	.	.	.	x	.	.	.	.	x	.
Mya truncata Linnaeus	x	.	.	.	x	.	.	.	.	.
Pandora grandis Dall	.	.	.	x	.	.	.	.	.	.
Periploma cf. *P. aleutica* (Krause)	.	.	.	.	x	.	.	.	.	.
Peronidia aff. *P. lutea alternidentata* (Broderip & Sowerby)	.	.	.	x	.	.	.	.	.	.
Predothaca stalagi (Gabb)	.	.	.	.	.	cf.	.	.	.	.
Saxicharma sp. indet.	.	.	.	x	.	.	.	.	.	.
Spisula albaria (Conrad)	.	.	.	x	.	.	.	.	.	.
Spisula polynyma (Stimpson)	x	.	.	.	.	.	.	.	.	.
Spisula sp. indet.	.	.	.	x	.	.	.	.	.	.
Gastropoda										
Beringius hertleini MacNeil	.	.	.	.	x	.	.	.	.	.
Buccinum sp. indet.	.	.	.	x	.	.	.	.	.	.
Fusitriton oregonensis (Redfield)	.	.	.	x	.	.	.	.	.	.
Natica clausa Broderip & Sowerby	.	.	.	x	.	.	.	x	x	x
Neptunea lyrata altispira Gabb	x	.	.	x	.	.	.	.	.	.
Neptunea sp. D. aff. *N. modesta* (Kuroda in Hommaji of Nelson (1974)	.	.	.	x	x	.	.	.	.	.
Neptunea sp. indet.	.	.	.	x	.	.	.	x	.	.
Oenopota sp.	.	.	.	x	.	.	.	.	.	.
Polinices diabloensis (Clark)	.	.	.	.	x	.	.	.	.	.
Polinices pallidus (Broderip & Sowerby)	.	.	.	x	.	.	.	.	.	.
Polinices sp. indet.	x	.	.	.	.	.	.	.	.	.

Kenmore Head South
(after Marincovich, 1983)

Top of exposed section



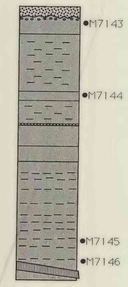
Covered by modern beach deposits

19 KENMORE HEAD SECTION (UPPER MIOCENE)

Taxa	Locality number: M7149
Bivalvia:	
Clinocardium hannibali Keen	x
Clinocardium meekianum (Gabb) n. subsp.?	x
Clinocardium sp. indet.	x
Cyclocardia sp.	x
Mizuhopecten mollerensis (MacNeil)	x
Mya eligans (Eichwald)	x
Mya truncata Linnaeus	x
Peronidia aff. *P. lutea alternidentata* (Broderip & Sowerby)	x
Spisula sp. indet.	x

South Walrus Peak Section
(after Marincovich, 1983)

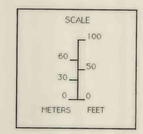
Top of exposed section



Section continues downward but not measured

17 SOUTH WALRUS PEAK SECTION (UPPER MIOCENE)

Taxa	Locality numbers: M7143	M7144	M7145	M7146
Bivalvia:				
Acila empirensis Howe	.	.	.	cf.
Chlamys cosibensis cosibensis (Yokoyama)	.	.	.	x
Clinocardium cf. *C. ciliatum* (Fabricius)	.	.	.	x
Clinocardium hannibali Keen	.	.	.	x
Clinocardium meekianum (Gabb) n. subsp.?	.	.	.	x
Clinocardium cf. *C. pristinum* Keen	.	.	.	x
Crenomytilus coalingensis (Arnold)	.	x	.	.
Cyclocardia cf. *C. roundiformis* (Ilyina)	.	.	.	x
Glycymeris grewingki Dall	.	.	.	x
Macoma incongrua (von Martens)	.	.	.	x
Macoma sp. indet.	.	.	x	x
Modiolotisca prolongatus (Carpenter)	.	.	.	x
Mizuhopecten mollerensis (MacNeil)	.	x	.	.
Musculus niger (Gray)	.	.	.	x
Mya eligans (Eichwald)	.	.	.	x
Mya truncata Linnaeus	x	.	.	x
Panomya izumo Nomura & Hatai	x	.	.	x
Periploma cf. *P. aleutica* (Krause)	.	.	.	x
Peronidia aff. *P. lutea alternidentata* (Broderip & Sowerby)	.	.	.	x
Siliqua cf. *S. alta* (Broderip & Sowerby)	.	.	.	x
Spisula albaria (Conrad)	.	.	.	cf.
Spisula brevirostata Packard	.	.	.	x
Spisula polynyma (Stimpson)	.	.	.	x
Spisula sp. indet.	.	.	.	x
Yoldia sciissurata Dall	.	x	.	x
Gastropoda				
Beringius hertleini MacNeil	.	.	.	x
Buccinum cf. *B. planeticum* Dall	.	.	.	x
Bulbus fragilis (Leach)	x	.	.	x
Margarites n. sp.?	.	.	.	x
Natica clausa Broderip & Sowerby	.	.	.	cf.
Naticid, genus indet.	x	.	.	x
Neptunea lyrata altispira Gabb	x	.	.	.
Neptunea sp. D. aff. *N. modesta* (Kuroda in Hommaji of Nelson	.	.	.	x
Neptunea sp. indet.	x	.	.	x
Oenopota cf. *O. candida* (Yokoyama)	x	.	.	x
Polinices pallidus (Broderip & Sowerby)	cf.	.	.	.



Lithologic Units
- Sandstone
- Siltstone
- Conglomerate
- Covered
- Volcanic intrusives
- Shale or shaly sandstone

PRELIMINARY TERTIARY MOLLUSCAN BIOSTRATIGRAPHY OF THE ALASKA PENINSULA, SOUTHWESTERN ALASKA

by Louie Marincovich, Jr. and Charles L. Powell, II

1989

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