

## PROGRESS REPORT

### Huron Mountain Club Wildlife Investigation

April 1, 1940 - October 10, 1941

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The present report is supplementary to the one dated April 1, 1940, and brings up to date the salient features of the investigation. Work will be continued in Ann Arbor this winter, followed by a month or so of field work next spring. The project will terminate on August 1, 1942, soon after which date it is hoped the final report will be completed.

List of vertebrates: As was to be expected, several additions and corrections have been made to the printed "Pocket List of the Vertebrates of the Huron Mountains, exclusive of the fishes," dated June 13, 1941. Further additions will doubtless be made in the future, especially among the birds. Breeding records have been noted for the following birds not so indicated in the list:

Pied-billed grebe	Eastern olive-sided flycatcher
Blue-winged teal	Northern blue jay
Eastern goshawk	House wren
Great horned owl	Eastern winter wren
Arctic three-toed woodpecker	Olive-backed thrush
Least flycatcher	Cedar waxwing
Eastern wood pewee	Myrtle warbler

The duck hawk, listed as extinct locally, has reappeared, and bred, in the region. Five species of birds have been added to the list, chiefly through the observations of S. Morris Pell; one new mammal has been taken in the area. These new records are:

Wilson's phalarope (*Steganopus tricolor*), probably summer  
Gadwall (*Chaulelasmus streperus*), fall transient (resident).  
Upland plover (*Bartramia longicauda*), fall transient.  
Greater yellow-legs (*Tringa melanoleuca*), fall transient.  
Pectoral sandpiper (*Erolia melanotos*), fall transient.

Woodland jumping mouse (*Napaeozapus insignis frutectanus*).

Birds banded: For the past two summers a special effort has been made to band juvenal gulls and cormorants at their nesting grounds on the Huron Islands. A few other birds have also been banded, on the mainland. In cooperation with the U. S. Fish and Wildlife Service, Department of the Interior, the following birds have so far been banded:

5	Double-crested cormorant
250	Herring gull
1	Chimney swift
7	Northern downy woodpecker
13	Barn swallow
15	Black-capped chickadee
3	White-breasted nuthatch
3	Eastern robin

Specimens collected: The following vertebrates have been preserved as permanent museum specimens. They include most of the local vertebrate fauna, with the exception of the birds.

2 Blue-tailed Skink	2 Red-bellied snake
5 Ring-necked snake	3 Garter snake
3 Pine or fox snake	5 Western painted turtle
1 American merganser	1 Northern blue jay
1 Sora	2 Black-capped chickadee
1 Yellow-billed cuckoo	2 White-breasted nuthatch
1 Richardson's owl	2 Red-breasted nuthatch
1 Saw-whet owl	1 Eastern robin
1 Eastern nighthawk	6 Common redpoll
1 Eastern hairy woodpecker	2 Northern pine siskin
2 Northern downy woodpecker	7 Red crossbill
1 Canada jay	7 White-winged crossbill
2 Star-nosed mole	7 Red squirrel
49 Masked shrew	1 Gray squirrel
1 Water shrew	3 Flying squirrel
24 Short-tailed shrew	3 Beaver
10 Little brown bat	32 White-footed mouse
1 Large brown bat	41 Red-backed mouse
1 Mink	19 Meadow mouse
4 Bonaparte weasel	1 Muskrat
2 Bridled weasel	6 Meadow jumping mouse
2 Red fox	1 Woodland jumping mouse
1 Wildcat	3 House mouse
3 Woodchuck	5 Porcupine
23 Western chipmunk	5 Snowshoe rabbit
6 Eastern chipmunk	2 White-tailed deer

Small mammal study: Each of the research plots has been intensively live-trapped for three 5-day periods, making a grand total of 14,520 trap-nights for all eight plots. Animal caught were marked and released where taken, in nearly all cases. Altogether, 621 specimens of 12 species have been taken, as follows:

	<u>1940</u>	<u>1941</u>	<u>Repeats*</u>
Sorex cinereus . . . . .	15	50	0
Blarina brevicauda . . . . .	0	25	0
Mustela cicognanii . . . . .	0	1	0
Eutamias minimus . . . . .	9	22	1
Tamias striatus . . . . .	8	18	1
Tamiasciurus hudsonicus.	0	1	0
Glaucomys sabrinus . . . . .	0	3	0
Peromyscus maniculatus . . . . .	67	283	20
Clothrionomys gapperi . . . . .	18	89	2
Microtus pennsylvanicus.	0	7	0
Zapus hudsonius . . . . .	0	3	0
Napaeozapus insignis . . . . .	0	2	0
	<u>117</u>	<u>504</u>	

\* Originally marked in 1940, recaptured in 1941.

It is of interest that the greatest number of species (11) occurs on Plot No. 5 (cutover hardwoods); the greatest number of individuals in any 5-day period (48) on Plot No. 8 (virgin hardwood and hemlock), and the least (3) on Plot No. 7 (black spruce swamp). Many things may be learned from this type of study; e.g. population limits; correlation of population with cover type, season, species; territoriality and range of species and individuals; habits and behavior; longevity, mortality; breeding cycle; sex ratio; etc. None of the data collected have as yet been critically analyzed; data for *Peromyscus* will undoubtedly be more significant than for any other species. Plot No. 8, intentionally located in a locality to be selectively logged this winter, will give an idea as to the effect of such cutting on the small mammal population.

The deer herd: Thanks to the fine cooperation of the 91 persons who participated in the deer drive on August 19, we have a basis for estimating the total population of deer on the Club lands. The area driven was 480 acres ( $3/4$  square mile), and included cutover lands, swamps, and virgin hardwoods and hemlocks in approximately the same proportion as on the entire area. On these 480 acres, 16 deer were counted. On this basis, after deducting the areas of lakes and rocky mountain sides, there are some 350 deer on the Club-owned lands (13,165 acres), or 1250 on the area being investigated (41,050 acres). This represents a density of 21 deer per square mile; 18 is the average throughout the Upper Peninsula in deer country.

It is apparent that this population is more than the lands can support. Long ago the ground hemlock, a favorite deer food, was depleted; white cedar, another favored species, is now badly over-browsed. The result will be starvation of the deer during the winter unless the population is lowered; or else death from pneumonia or parasites, when their resistance is lowered (our deer at present are infected with lungworms and liver flukes, though not to a dangerous extent); as well as the ruination of all possible available foods. For this reason hunting is to be encouraged; and the oppression of predators, coyotes and wolves particularly, should cease. For some years the Club has opened 5,000 acres of its lands along the Salmon Trout River to public hunting. Hunters have registered with the Club guards, and have reported their kill. There have been no accidents, and no game law violations, as far as is known. In 1939, 121 hunters killed 33 deer; in 1940, 142 hunters killed 53 deer.\* This is decidedly a step in the right direction. It is an invaluable aid to public relations; and it helps to keep the deer within bounds. But even so, further reduction is necessary, for the deer is a hardy and prolific species.

The Club lands have a definite potential carrying capacity for deer. At present, they are far below this capacity, and they will not return until the pressure is removed sufficiently for them to regenerate. Feeding the deer alfalfa hay does not increase the carrying capacity of the land - it merely entices the deer to stay where conditions for them are far below the optimum. In fact, alfalfa hay alone probably would not carry a single deer through the

\*These figures are not only for Club-owned lands, but for adjacent property as well.

winter alive. It is strongly recommended, therefore, that the practice of feeding the deer alfalfa hay be discontinued - thus saving the Club some 4.5 tons of hay, at \$14.00 per ton, each winter. The practice of feeding kitchen scraps to the few tame deer that frequent the Club grounds is another matter, and may be continued if desired in order to attract such deer for aesthetic purposes, although it must be expected that some damage will result to ornamental trees and shrubs.

Beaver: In the area investigated there were, the autumn of 1940, 18 active colonies of beaver. Five beaver per colony is probably a safe figure. The available food supply (aspen, by preference) is low, and beavers have migrated off the Club lands from time to time. It would seem wise for the Club to judiciously trap some of the surplus, especially nuisance beaver (as along lower Pine River), thus defraying some of the wildlife expenses.

It has not been adequately demonstrated that beaver, or their dams, are in any way detrimental to trout in such a stream as the Salmon Trout. The dams would almost certainly be washed out by the spring freshets; the ponds might well attract wood ducks, otter (temporarily), or other animals. And the beaver has an aesthetic value in such a place, where many people may easily visit it. It is said that there has been no better trout fishing in this country than the Big Huron River, years ago, when there was a beaver dam beyond nearly every bend. It is suggested that the beaver be left unmolested in the Salmon Trout River for a few years; it is predicted that fishing will be no worse, if, indeed, it is not improved.

Otter: The otter is a very wide-ranging species, and from time to time is seen on the property. Several persons were delighted, the past summer, to have fine views of otters on Club waters. Between June 20, 1938 and June 30, 1941 thirteen otter droppings have been collected in the Huron Mountains. By bulk, they contain a great preponderance of crayfish remains. Twenty-two individual fish are represented; seven of these are trout. By species, the following foods are represented in the thirteen samples:

Crayfish	occurred in	5	samples
Various insects	" "	5	"
Trout	" "	5	"
Rock bass	" "	3	"
Suckers	" "	2	"
Minnows	" "	2	"
Muddlers	" "	1	"
Yellow perch	" "	1	"
Burbot	" "	1	"
Other fish	" "	4	"
Frog	" "	1	"
Salamander	" "	1	"
Meadow mouse?	" "	1	"
Unidentified mammal	" "	1	"

Ruffed grouse: The ruffed grouse is a cyclic species which fluctuates periodically in numbers. At intervals of approximately ten years, about 90% of the population dies off, from causes as yet undetermined. At present we are near the high point in the cycle.

There were many coveys of grouse on the property during the past summer. With the onset of the hunting season, extremely wet weather has kept them under cover. To date, 19 have been taken in the vicinity by 9 people during the present open season. Advisable management measures would appear to be chiefly the improvement of food and cover. All of the Club property is tolerably good grouse country. The planting of white and alsike clover along roads and clearings, and the cutting of small openings in upland country, would probably improve conditions.

Respectfully submitted,

Richard H. Manville

Investigator in Wildlife Research

October 10, 1941

MAMMALS (45)

Star-nosed mole (*Condylura cristata*)  
 Masked shrew (*Sorex cinereus cinereus*)  
 Water shrew (*Sorex palustris hydrobadistes*)  
 Pigmy shrew (*Microsorex hoyi intervectus*)  
 Short-tailed shrew (*Blarina brevicauda talpoides*)  
 Little brown bat (*Myotis lucifugus lucifugus*)  
 Keen bat (*Myotis keenii septentrionalis*)  
 Silver-haired bat (*Lasionycteris noctivagans*)  
 Large brown bat (*Eptesicus fuscus fuscus*)  
 Black bear (*Ursus americanus americanus*)  
 Raccoon (*Procyon lotor lotor*)  
 Pine marten (*Martes americana americana*), extinct  
 Fisher (*Martes pennanti*), extinct  
 Mink (*Mustela vison letifera*)  
 Bonaparte weasel (*Mustela cicognanii cicognanii*)  
 Bridled weasel (*Mustela frenata noveboracensis*)  
 Wolverine (*Gulo luscus*), extinct  
 Otter (*Lutra canadensis canadensis*)  
 Skunk (*Mephitis mephitis hudsonica*)  
 Badger (*Taxidea taxus taxus*)  
 Red fox (*Vulpes fulva*)  
 Coyote (*Canis latrans latrans*)  
 Timber wolf (*Canis lycaon*)  
 Canada lynx (*Lynx canadensis canadensis*), extinct  
 Wildcat (*Lynx rufus rufus*)  
 Mountain lion (*Felis concolor cougar*), extinct  
 Woodchuck (*Marmota monax canadensis*)  
 Western chipmunk (*Eutamias minimus jacksoni*)  
 Eastern chipmunk (*Tamias striatus lysteri*)  
 Red squirrel (*Tamiasciurus hudsonicus loquax*)  
 Gray or black squirrel (*Sciurus carolinensis hypophaeus*)  
 Flying squirrel (*Glaucomys sabrinus macrotis*)  
 Beaver (*Castor canadensis michiganensis*)  
 White-footed mouse (*Peromyscus maniculatus gracilis*)  
 Red-backed mouse (*Clethrionomys gapperi gapperi*)  
 Meadow mouse (*Microtus pennsylvanicus pennsylvanicus*)  
 Muskrat (*Ondatra zibethica zibethica*)  
 Meadow jumping mouse (*Zapus hudsonius hudsonius*)  
 House mouse (*Mus musculus musculus*)  
 Porcupine (*Erethizon dorsatum dorsatum*)  
 Snowshoe rabbit (*Lepus americanus phaeonotus*)  
 Cottontail rabbit (*Sylvilagus floridanus mearnsii*)  
 White-tailed deer (*Odocoileus virginianus borealis*)  
 Moose (*Alces americanus americanus*), extinct  
 Caribou (*Rangifer caribou caribou*), extinct

RICHARD H. MANVILLE.

Huron Mountain Club  
 Marquette County, Michigan  
 June 13, 1941

GUELFF PTG. CO.

A POCKET LIST OF THE

Vertebrates of the Huron Mountains

EXCLUSIVE OF THE FISHES

This list applies to the area owned by and adjacent to the Huron Mountain Club, and includes some records from the Yellow Dog Plains about ten miles south of Lake Superior, and from the city of Marquette. Observations of Messrs. Bayard H. Christy, Stephen S. Gregory, Jr., William P. Harris, Jr., H. Emerson Tuttle, Josselyn Van Tyne, and others are included, as well as continuous observations of the compiler for over a year. Only those species are listed of which specimens have been collected, or which have been positively identified by competent observers. Vernacular names are in some cases reduced for local use, but scientific names are in all cases given in full. The birds are grouped as: permanent residents; summer residents; winter visitants; transients, that is, migrant in spring or fall, or both; vagrants, irregular or sporadic in appearance; and hypothetical records. An asterisk indicates definite breeding records.

AMPHIBIANS (12)

Newt or red eft (*Triturus viridescens viridescens*)  
 Jefferson's salamander (*Ambystoma jeffersonianum*)  
 Spotted salamander (*Ambystoma maculatum*)  
 Red-backed salamander (*Plethodon cinereus*)  
 American toad (*Bufo americanus*)  
 Spring peeper (*Hyla crucifer*)  
 Common tree-toad (*Hyla versicolor versicolor*)  
 Wood frog (*Rana cantabrigensis*)  
 Green frog (*Rana clamitans*)  
 Pickerel frog (*Rana palustris*)  
 Leopard frog (*Rana pipiens*)  
 Mink frog (*Rana septentrionalis*)

REPTILES (9)

Blue-tailed skink (*Eumeces fasciatus*)  
 Ring-necked snake (*Diadophis punctatus edwardsii*)  
 Pine or fox snake (*Elaphe vulpina*)  
 Red-bellied snake (*Storeria occipito-maculata*)  
 Garter snake (*Thamnophis sirtalis sirtalis*)  
 Snapping turtle (*Chelydra serpentina*)  
 Blanding's turtle (*Emys blandingii*)  
 Western painted turtle (*Chrysemys picta bellii*)  
 Central painted turtle (*Chrysemys picta marginata*)

Summer Residents (Continued)

Black-billed cuckoo (*Coccyzus erythrophthalmus*)  
 Eastern whippoorwill (*Antrostomus vociferus vociferus*)  
 Eastern nighthawk (*Chordeiles minor minor*)\*  
 Chimney swift (*Chaetura pelagica*)\*  
 Ruby-throated hummingbird (*Archilochus colubris*)  
 Eastern belted kingfisher (*Megaceryle alcyon alcyon*)\*  
 Northern flicker (*Colaptes auratus luteus*)\*  
 Red-headed woodpecker (*Melanerpes erythrocephalus erythrocephalus*)  
 Yellow-bellied sapsucker (*Sphyrapicus varius varius*)  
 Eastern kingbird (*Tyrannus tyrannus*)\*  
 Northern crested flycatcher (*Myiarchus crinitus boreus*)\*  
 Eastern phoebe (*Sayornis phoebe*)\*  
 Alder flycatcher (*Empidonax traillii traillii*)  
 Least flycatcher (*Empidonax minimus*)  
 Eastern wood pewee (*Myiochanes virens*)  
 Eastern olive-sided flycatcher (*Nuttallornis borealis cooperi*)  
 Tree swallow (*Iridoprocne bicolor*)\*  
 Rough-winged swallow (*Stelgidopteryx ruficollis serripennis*)  
 Barn swallow (*Hirundo rustica erythrogaster*)\*  
 Northern cliff swallow (*Petrochelidon albifrons albifrons*)  
 Purple martin (*Progne subis subis*)  
 Eastern crow (*Corvus corone brachyrhynchos*)\*  
 Brown creeper (*Certhia familiaris americana*)\*  
 House wren (*Troglodytes aedon* subsp.)  
 Eastern winter wren (*Nannus hiemalis hiemalis*)  
 Short-billed marsh wren (*Cistothorus stellaris*)\*  
 Catbird (*Dumetella carolinensis*)  
 Brown thrasher (*Toxostoma rufum*)  
 Eastern robin (*Turdus migratorius migratorius*)\*  
 Wood thrush (*Hylocichla mustelina*)  
 Eastern hermit thrush (*Hylocichla guttata faxoni*)\*  
 Olive-backed thrush (*Hylocichla ustulata swainsoni*)  
 Willow thrush or veery (*Hylocichla fuscescens* subsp.)  
 Eastern bluebird (*Sialia sialis sialis*)  
 Eastern golden-crowned kinglet (*Regulus regulus satrapa*)  
 Eastern ruby-crowned kinglet (*Regulus calendula calendula*)  
 Cedar waxwing (*Bombycilla cedrorum*)  
 Starling (*Sturnus vulgaris vulgaris*)  
 Blue-headed or solitary vireo (*Vireo solitarius solitarius*)\*  
 Red-eyed vireo (*Vireo olivaceus*)  
 Black and white warbler (*Mniotilta varia*)  
 Nashville warbler (*Vermivora ruficapilla ruficapilla*)  
 Northern parula warbler (*Compothlypis americana pusilla*)\*  
 Eastern yellow warbler (*Dendroica aestiva aestiva*)  
 Magnolia warbler (*Dendroica magnolia*)\*  
 Black-throated blue warbler (*Dendroica caerulescens caerulescens*)  
 Myrtle warbler (*Dendroica coronata*)  
 Black-throated green warbler (*Dendroica virens virens*)\*  
 Blackburnian warbler (*Dendroica fusca*)\*  
 Chestnut-sided warbler (*Dendroica pensylvanica*)  
 Northern pine warbler (*Dendroica pinus pinus*)  
 Ovenbird (*Seiurus aurocapillus*)\*  
 Water-thrush (*Seiurus noveboracensis* subsp.)  
 Mourning warbler (*Oporornis philadelphia*)\*  
 Wilson's Phalarope (*Steganopus tricolor*)

Summer Residents (Continued)

Northern yellow-throat (*Geothlypis trichas brachidactyla*)  
 Wilson's warbler (*Wilsonia pusilla pusilla*)  
 Canada warbler (*Wilsonia canadensis*)  
 American redstart (*Setophaga ruticilla*)\*  
 Bobolink (*Dolichonyx oryzivorus*)  
 Eastern meadowlark (*Sturnella magna magna*)  
 Western meadowlark (*Sturnella neglecta*)  
 Eastern redwing (*Agelaius phoeniceus phoeniceus*)\*  
 Bronzed grackle (*Quiscalus quiscula aeneus*)\*  
 Eastern cowbird (*Molothrus ater ater*)  
 Scarlet tanager (*Piranga erythromelas*)  
 Rose-breasted grosbeak (*Hedymeles ludovicianus*)\*  
 Evening grosbeak (*Hesperiphona vespertina vespertina*)\*  
 Eastern purple finch (*Carpodacus purpureus purpureus*)  
 Eastern goldfinch (*Spinus tristis tristis*)  
 Red-eyed towhee (*Pipilo erythrophthalmus erythrophthalmus*)  
 Eastern savannah sparrow (*Passerculus sandwichensis savanna*)  
 Eastern vesper sparrow (*Poocetes gramineus gramineus*)  
 Slate-colored junco (*Junco hyemalis hyemalis*)\*  
 Eastern chipping sparrow (*Spizella passerina passerina*)\*  
 White-throated sparrow (*Zonotrichia albicollis*)  
 Swamp sparrow (*Melospiza georgiana*)  
 Song sparrow (*Melospiza melodia* subsp.)\*

Winter Visitants (7)

Red-throated loon (*Gavia stellata*)  
 American golden-eye (*Bucephala clangula americana*)  
 Old-squaw (*Clangula hyemalis*)  
 Snowy owl (*Nyctea nyctea*)  
 Great gray owl (*Scotiaptex nebulosa nebulosa*)  
 Canadian pine grosbeak (*Pinicola enucleator leucura*)  
 Common redpoll (*Acanthis linaria linaria*)

Transients (42)

Holboell's grebe (*Colymbus griseogen holboelli*)  
 Horned grebe (*Colymbus auritus*)  
 Canada goose (*Branta canadensis canadensis*)  
 Mallard (*Anas platyrhynchos platyrhynchos*)  
 Pintail (*Anas acuta tzitzihoa*)  
 Green-winged teal (*Anas crecca carolinensis*)  
 Baldpate (*Mareca americana*)  
 Ring-necked duck (*Nyroca collaris*)  
 Lesser scaup duck or broadbill (*Nyroca affinis*)  
 Buffle-head (*Bucephala albeola*)  
 Ruddy duck (*Oxyura jamaicensis rubida*)  
 Red-breasted merganser (*Mergus serrator*)  
 Eastern goshawk (*Accipiter gentilis atricapillus*)  
 Krider's hawk (*Buteo jamaicensis krideri*)  
 American rough-legged hawk (*Buteo lagopus sancti-johannis*)  
 American coot (*Fulica americana americana*)  
 Black-bellied plover (*Squatarola squatarola*)  
 Golden plover (*Pluvialis dominica dominica*)  
 Semipalmated plover (*Charadrius hiaticula semipalmatus*)  
 Gadwall - *Chaulelasmus streperus*  
 Upland Plover - *Bartramia longicauda*  
 Greater yellow-legs - *Tringa melanoleuca*  
 Pectoral sandpiper - *Erolia melanotos*

## BIRDS (203)

### Permanent Residents (20)

Canada spruce grouse (*Canachites canadensis canace*)  
 Canada ruffed grouse (*Bonasa umbellus togata*)\*  
 Prairie sharp-tailed grouse (*Pedioecetes phasianellus campestris*)  
 Herring gull (*Larus argentatus smithsonianus*)\*  
 Great horned owl (*Bubo virginianus virginianus*)  
 Northern barred owl (*Strix varia varia*)  
 Saw-whet owl (*Cryptoglaux acadica acadica*)  
 Northern pileated woodpecker (*Geophloeus pileatus abieticola*)\*  
 Eastern hairy woodpecker (*Dryobates villosus villosus*)\*  
 Northern downy woodpecker (*Dryobates pubescens medianus*)  
 Arctic three-toed woodpecker (*Picoides arcticus*)  
 Canada jay (*Perisoreus canadensis canadensis*)\*  
 Northern blue jay (*Cyanocitta cristata bromia*)  
 Southern raven (*Corvus corax europilus*)  
 Black-capped chickadee (*Penthestes atricapillus atricapillus*)\*  
 Hudsonian chickadee (*Penthestes hudsonicus hudsonicus*)  
 White-breasted nuthatch (*Sitta carolinensis carolinensis*)  
 Red-breasted nuthatch (*Sitta canadensis canadensis*)  
 English sparrow (*Passer domesticus domesticus*)\*  
 Northern pine siskin (*Spinus pinus pinus*)

### Summer Residents (107)

Lesser loon (*Gavia immer elasson*)\*  
 Pied-billed grebe (*Podilymbus podiceps podiceps*)  
 Double-crested cormorant (*Phalacrocorax auritus auritus*)\*  
 Great blue heron (*Ardea herodias herodias*)\*  
 American bittern (*Botaurus lentiginosus lentiginosus*)  
 Eastern least bittern (*Ixobrychus exilis exilis*)  
 Cory's bittern (*Ixobrychus neoxenus*)  
 Black duck (*Anas rubripes*)\*  
 Blue-winged teal (*Anas discors*)  
 Wood duck (*Aix sponsa*)\*  
 Hooded merganser (*Lophodytes cucullatus*)\*  
 American merganser (*Mergus merganser americanus*)\*  
 Sharp-shinned hawk (*Accipiter striatus velox*)  
 Cooper's hawk (*Accipiter cooperi*)  
 Eastern red-tailed hawk (*Buteo jamaicensis borealis*)  
 Broad-winged hawk (*Buteo platypterus platypterus*)  
 Bald eagle (*Haliaeetus leucocephalus washingtoniensis*)\*  
 Marsh hawk (*Circus cyaneus hudsonius*)  
 Osprey (*Pandion haliaeetus carolinensis*)\*  
 Duck hawk (*Falco sparverius sparverius*)  
 Sharp-shinned hawk (*Accipiter striatus velox*)

### Transients (Continued)

Lesser yellow-legs (*Tringa flavipes*)  
 Eastern solitary sandpiper (*Tringa solitaria solitaria*)  
 Ruddy turnstone (*Arenaria interpres morinella*)  
 Sanderling (*Crocethia alba*)  
 Semipalmated sandpiper (*Ereunetes pusillus*)  
 Least sandpiper (*Erolia minutilla*)  
 Red-backed sandpiper (*Erolia alpina sakhalina*)  
 Northern horned lark (*Otocoris alpestris alpestris*)  
 Gray-cheeked thrush (*Hylocichla minima aliciae*)  
 American pipit (*Anthus spinoletta rubescens*)  
 Tennessee warbler (*Vermivora peregrina*)  
 Cape May warbler (*Dendroica tigrina*)  
 Bay-breasted warbler (*Dendroica castanea*)  
 Black-poll warbler (*Dendroica striata*)  
 Western palm warbler (*Dendroica palmarum palmarum*)  
 Rusty blackbird (*Euphagus carolinus*)  
 Eastern tree sparrow (*Spizella arborea arborea*)  
 Harris's sparrow (*Zonotrichia querula*)  
 White-crowned sparrow (*Zonotrichia leucophrys leucophrys*)  
 Eastern fox sparrow (*Passerella iliaca iliaca*)  
 Lincoln's sparrow (*Melospiza lincolni lincolni*)  
 Lapland longspur (*Calcarius lapponicus lapponicus*)  
 Eastern snow bunting (*Plectrophenax nivalis nivalis*)

### Vagrants (21)

American scoter (*Oidemia nigra americana*)  
 Northern red-shouldered hawk (*Buteo lineatus lineatus*)  
 Ring-billed gull (*Larus delawarensis*)  
 Caspian tern (*Hydroprogne tschegrava tschegrava*)  
 Eastern mourning dove (*Zenaidura macroura carolinensis*)  
 Long-eared owl (*Asio wilsonianus*)  
 Short-eared owl (*Asio flammeus flammeus*)  
 Richardson's owl (*Cryptoglaux funerea richardsoni*)  
 American three-toed woodpecker (*Picoides tridactylus bacatus*)  
 Arkansas kingbird (*Tyrannus verticalis*)  
 Prairie horned lark (*Otocoris alpestris praticola*)  
 Eastern mockingbird (*Mimus polyglottos polyglottos*)  
 Giant redwing (*Agelaius phoeniceus arctolegus*)  
 Eastern cardinal (*Richmondia cardinalis cardinalis*)  
 Indigo bunting (*Passerina cyanea*)  
 Red crossbill (*Loxia curvirostra neogaea*)\*  
 White-winged crossbill (*Loxia leucoptera*)\*  
 Nelson's sparrow (*Ammodramus caudacuta nelsoni*)  
 Field sparrow (*Spizella pusilla*)  
 Field sparrow (*Spizella pusilla*)  
 Field sparrow (*Spizella pusilla*)