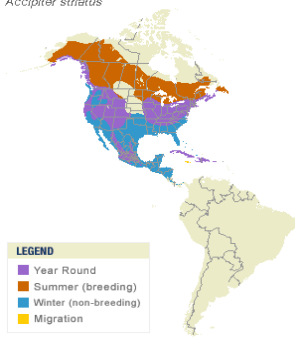
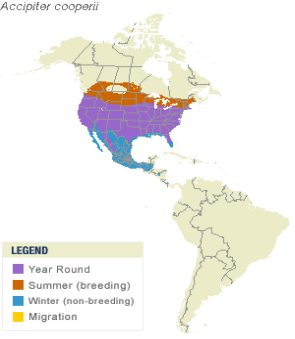
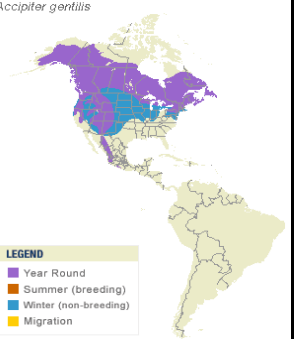
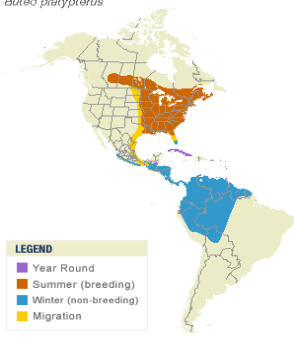
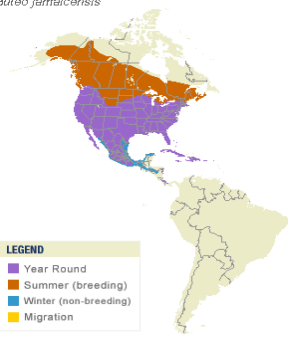
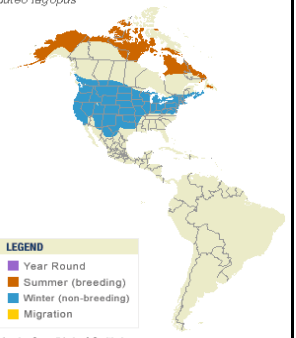


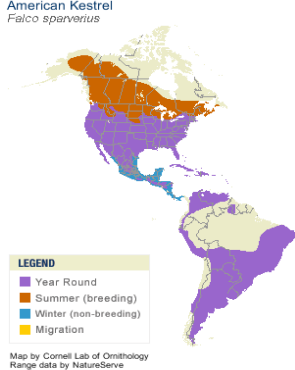
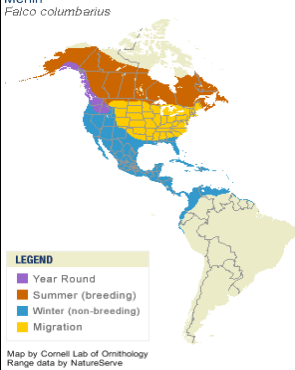

Raptors at a Glance

	Accipiters		
Common Name	Sharp-shinned Hawk	Cooper's Hawk	Northern Goshawk
Scientific Name	<i>Accipiter striatus</i>	<i>Accipiter cooperii</i>	<i>Accipiter gentilis</i>
Former Common Name			
Nest Location / Type	Woodlands	Woods, adapts well to urban areas; MF build	Woodlands, highly aggressive toward human encroachment; MF build
Clutch Size / # Broods	4-5 / 1 brood	4-5 / 1 brood	3-4 / 1 brood
Pair Bond	Monogamous	Monogamous	Monogamous
# Days Incubate	32-35; F	32-36; F>M	36-38; F>M
# Days to Fledge	24-27	27-34	35-42
Chick Development	Semialtricial 1	Semialtricial 1	Semialtricial 1
Parental Care of Young	MF feed, young dependant 21-28 days after fledging	MF feed; male hunts from incubation to fledge; young dependant 30-40 days after fledging	MF feed; male hunts from incubation to fledge, female feeds young; young dependant 30-40 days after fledging
Primary Food	Small birds	Small birds, some mammals	Birds, mammals, grouse, squirrels, snowshoe hares
Hunting Style	Aerial pursuit	Aerial pursuit	Aerial pursuit, low patrol
Range Map	<p>Sharp-shinned Hawk <i>Accipiter striatus</i></p>  <p>Map by Cornell Lab of Ornithology Range data by NatureServe</p>	<p>Cooper's Hawk <i>Accipiter cooperii</i></p>  <p>Map by Cornell Lab of Ornithology Range data by NatureServe</p>	<p>Northern Goshawk <i>Accipiter gentilis</i></p>  <p>Map by Cornell Lab of Ornithology Range data by NatureServe</p>
Notes		HY birds = up to 20% of breeding population; young hatch synchronously but show distinct size difference between chicks.	Up to 25% of F breeds in HY, 25% of F breed in SY, 50% don't breed till TY; irruptions occur on 10 year cycle (approx).
Definitions:			
Chick Development		Mating Systems	
<u>Altricial</u> : Immobile, downless, eyes closed, fed		<u>Monogamy</u> : One male, one female	
<u>Semialtricial 2</u> : Immobile, downy, eyes closed, fed		<u>Polygamy</u> : Both polyandry and polygyny	
<u>Semialtricial 1</u> : Immobile, downy, eyes open, fed		<u>Polyandry</u> : One female, multiple males	
<u>Semiprecocial</u> : Mobile, remain at nest, fed		<u>Polygyny</u> : One male, multiple females	
<u>Precocial 4</u> : Mobile, downy, follow parents, fed		<u>Promiscuous</u> : Males and females mate indiscriminately	
<u>Precocial 3</u> : Mobile, downy, follow parents, are shown food		<u>Cooperative</u> : 2+ females raise broods in same nest &/OR non-breeding females help at the nest of other breeding birds	
<u>Precocial 2</u> : Mobile, downy, follow parents, find own food			

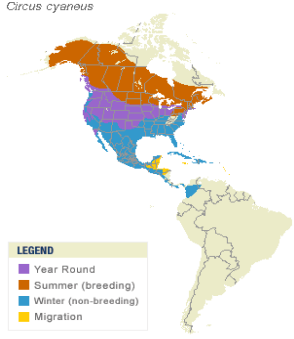
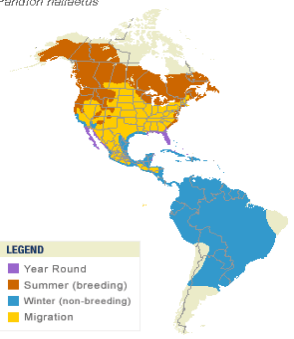
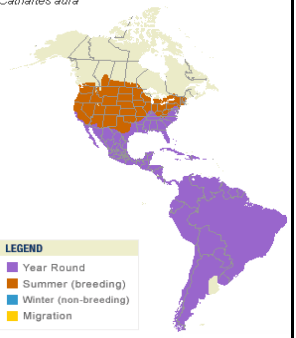
Raptors at a Glance

	Buteos		
Common Name	Broad-winged Hawk	Red-tailed Hawk	Rough-legged Hawk
Scientific Name	<i>Buteo lineatus</i>	<i>Buteo jamaicensis</i>	<i>Buteo lagopus</i>
Former Common Name		Chicken Hawk	
		Trees, cliffs, towers; females alternate perennial nests; MF build	
Nest Location / Type	Woodlands, MF build		Tundra, cliffs; MF build
Clutch Size / # Broods	2-3 / 1 brood	2-3 / 1? Brood	2-7 (> with > lemming pop) / 1 brood
Pair Bond	Monogamous	Monogamous	Monogamous
# Days Incubate	28-32; F>M (M feeds F)	30-35; F>M	28-31; F>M (M feeds F)
# Days to Fledge	35	45-46	39-43
Chick Development	Semialtricial 1	Semialtricial 1	Semialtricial 1
Parental Care of Young	MF feed; chicks hatch asynchronously (size difference measurable)	MF feed; chicks hatch asynchronously	MF feed; chicks hatch asynchronously
Primary Food	Reptiles, amphibians, insects, some small mammals or birds (nestlings)	Small rodents, also amphibians, reptiles, birds, insects	Small rodents, insects
Hunting Style	Perch/swoops to ground	Perch/ swoop	Kite / hover and swoop
Range Map	<p>Broad-winged Hawk <i>Buteo platypterus</i></p>  <p>Map by Cornell Lab of Ornithology Range data by NatureServe</p>	<p>Red-tailed Hawk <i>Buteo jamaicensis</i></p>  <p>Map by Cornell Lab of Ornithology Range data by NatureServe</p>	<p>Rough-legged Hawk <i>Buteo lagopus</i></p>  <p>Map by Cornell Lab of Ornithology Range data by NatureServe</p>
Notes		Dramatic courtship displays, swoops, dives, rolls and talon locking; highly adapted to human encroachment	Often roost communally on wintering grounds
Definitions:			
Chick Development		Mating Systems	
<u>Altricial</u> : Immobile, downless, eyes closed, fed		<u>Monogamy</u> : One male, one female	
<u>Semialtricial 2</u> : Immobile, downy, eyes closed, fed		<u>Polygamy</u> : Both polyandry and polygyny	
<u>Semialtricial 1</u> : Immobile, downy, eyes open, fed		<u>Polyandry</u> : One female, multiple males	
<u>Semiprecocial</u> : Mobile, remain at nest, fed		<u>Polygyny</u> : One male, multiple females	
<u>Precocial 4</u> : Mobile, downy, follow parents, fed		<u>Promiscuous</u> : Males and females mate indiscriminately	
<u>Precocial 3</u> : Mobile, downy, follow parents, are shown food		<u>Cooperative</u> : 2+ females raise broods in same nest &/OR non- breeding females help at the nest of other breeding birds	
<u>Precocial 2</u> : Mobile, downy, follow parents, find own food			

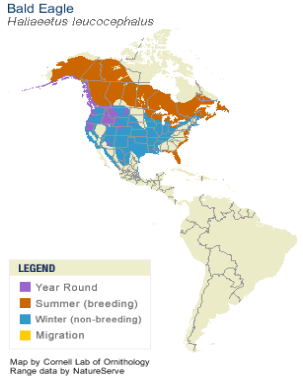
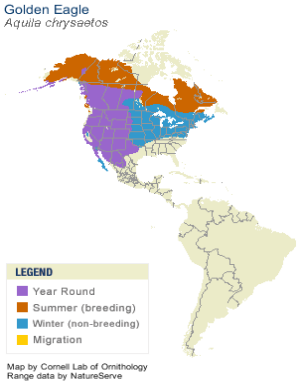
Raptors at a Glance

	Falcons		
Common Name	American Kestrel	Merlin	Peregrine Falcon
Scientific Name	<i>Falco sparverius</i>	<i>Falco columbarius</i>	<i>Falco peregrinus</i>
Former Common Name	Sparrow Hawk	Pigeon Hawk	Duck Hawk
Nest Location / Type	Cavity in snags, nest boxes, little to no nesting material	Trees/cliffs; well adapted to urbanization; opportunistic use of abandoned nests; in the Duluth area, typically use an old crow nest at the top of a spruce or pine tree	Cliffs, open habitat, tundra, but well adapted to urbanization, nesting on buildings and ledges
Clutch Size / # Broods	4-5 / 1 brood (occasionally 2 when food is abundant)	4-5 / 1 brood	3-4 / 1 brood
Pair Bond	Monogamous	Monogamous	Monogamous
# Days Incubate	29-31; F>M	28-32; F>M	29-32; F>M
# Days to Fledge	30-31	30-35	35-42
Chick Development	Semialtricial 2	Semialtricial 2	Semialtricial 2
Parental Care of Young	MF feed	MF feed, Male does all hunting from courtship thru fledging	MF feed; male hunts, female broods and feeds chicks
Primary Food	Insects, amphibians, reptiles, occasionally small mammals	Birds, small mammals, insects	Birds, esp doves, pigeons, ducks, shorebirds, cuckoos
Hunting Style	Perch, kite / hover, swoop	Aerial pursuit	Aerial pursuit, stoops
Range Map	<p>American Kestrel <i>Falco sparverius</i></p>  <p>Map by Cornell Lab of Ornithology Range data by NatureServe</p>	<p>Merlin <i>Falco columbarius</i></p>  <p>Map by Cornell Lab of Ornithology Range data by NatureServe</p>	<p>Peregrine Falcon <i>Falco peregrinus</i></p>  <p>Map by Cornell Lab of Ornithology Range data by NatureServe</p>
Notes	Migration coincides with large dragonfly migration; often seen eating while flying	Highly territorial and aggressive; males usually return to breeding grounds prior to females; male yearlings often help defend territory and feed brooding female	Pairs roost together, hunt cooperatively. Female larger, eats first, dives first when hunting and takes larger prey than male; worldwide range greater than any other raptor species
Definitions:			
Chick Development		Mating Systems	
<u>Altricial</u> : Immobile, downless, eyes closed, fed		<u>Monogamy</u> : One male, one female	
<u>Semialtricial 2</u> : Immobile, downy, eyes closed, fed		<u>Polygamy</u> : Both polyandry and polygyny	
<u>Semialtricial 1</u> : Immobile, downy, eyes open, fed		<u>Polyandry</u> : One female, multiple males	
<u>Semiprecocial</u> : Mobile, remain at nest, fed		<u>Polygyny</u> : One male, multiple females	
<u>Precocial 4</u> : Mobile, downy, follow parents, fed		<u>Promiscuous</u> : Males and females mate indiscriminately	
<u>Precocial 3</u> : Mobile, downy, follow parents, are shown food		<u>Cooperative</u> : 2+ females raise broods in same nest &/OR non-breeding females help at the nest of other breeding birds	
<u>Precocial 2</u> : Mobile, downy, follow parents, find own food			

Raptors at a Glance

	Harrier	Osprey	Vulture
Common Name	Northern Harrier	Osprey	Turkey Vulture
Scientific Name	<i>Circus cyaneus</i>	<i>Pandion haliaetus</i>	<i>Cathartes aura</i>
Former Common Name	Marsh Hawk	Fish Hawk, Fish Eagle	Turkey Buzzard
Nest Location / Type	On ground or in low shrubbery, MF build	Near open water; high trees, power line towers, platforms; MF build; perennial	NO NEST! Rear young communally on rocky cliffs and outcrop-pings, occasionally caves and snags, incubate eggs on ground
Clutch Size / # Broods	4-9 / 1 brood	2-4 / 1 brood	2
Pair Bond	Monogamous / polygynous	Monogamous	Monogamous
# Days Incubate	31-32; F	32-43; F>M (M feeds F)	38-41; MF
# Days to Fledge	30-35	48-59	66-88
Chick Development	Semialtricial 1	Semialtricial 1	Semialtricial 2
Parental Care of Young	Female feeds and broods young;	Male hunts, female feeds; regurgitate food for 1st 10 days; young require 3-6 lbs of fish daily	MF feed, regurgitate food for young
Primary Food	Voles, birds, insects, reptiles, amphibians, carrion	Fish, occasionally rodents, birds, small reptiles, amphibians, crustaceans	Anything dead, as small as tadpoles!
Hunting Style	Low patrol, facial discs allow hunting by sound	High diving	Locate by sight and smell
Range Map	<p>Northern Harrier <i>Circus cyaneus</i></p>  <p>Map by Cornell Lab of Ornithology Range data by NatureServe</p>	<p>Osprey <i>Pandion haliaetus</i></p>  <p>Map by Cornell Lab of Ornithology Range data by NatureServe</p>	<p>Turkey Vulture <i>Cathartes aura</i></p>  <p>Map by Cornell Lab of Ornithology Range data by NatureServe</p>
Notes	Females aggressively exclude males from feeding areas during non-breeding season. Often roost communally on the ground in non-breeding season.	Zygodactyl: two toes point forward, two toes point backward. Aids in carrying fish head first while flying (aerodynamic).	Vultures not banded species, defecate down legs so not really raptors, more closely related to storks. Projectile vomit as defense mechanism.
Definitions:			
Chick Development		Mating Systems	
<u>Altricial</u> : Immobile, downless, eyes closed, fed		<u>Monogamy</u> : One male, one female	
<u>Semialtricial 2</u> : Immobile, downy, eyes closed, fed		<u>Polygamy</u> : Both polyandry and polygyny	
<u>Semialtricial 1</u> : Immobile, downy, eyes open, fed		<u>Polyandry</u> : One female, multiple males	
<u>Semiprecocial</u> : Mobile, remain at nest, fed		<u>Polygyny</u> : One male, multiple females	
<u>Precocial 4</u> : Mobile, downy, follow parents, fed		<u>Promiscuous</u> : Males and females mate indiscriminately	
<u>Precocial 3</u> : Mobile, downy, follow parents, are shown food		<u>Cooperative</u> : 2+ females raise broods in same nest &/OR non-breeding females help at the nest of other breeding birds	
<u>Precocial 2</u> : Mobile, downy, follow parents, find own food			

Raptors at a Glance

	Eagles		
Common Name	Bald Eagle	Golden Eagle	
Scientific Name	<i>Haliaeetus leucocephalus</i>	<i>Aquila chrysaetos</i>	
Former Common Name			
Nest Location / Type	High trees, cliffs. Perennial nesters, adding to size of nest each year	Cliffs/ high trees; MF construct; awesome courting displays of diving and calling. Perennial nesters, often pairs have more than one nest site.	
Clutch Size / # Broods	2-3 / 1 brood	2-3 / 1 brood	
Pair Bond	Monogamous, long term bond	Monogamous	
# Days Incubate	34-36; MF	43-45; FM	
# Days to Fledge	70-98	66-75	
Chick Development	Semialtricial 1	Semialtricial 1	
Parental Care of Young	MF feed, young hatch asynchronously, smaller often dies	MF feed, male hunts most during incubation and rearing. M feeds F, F feeds chicks. Larger chick often kills smaller.	
Primary Food	Fish, birds, small mammals, carrion	Rabbits, mammals, carrion if mammals scarce - can take a deer fawn!	
Hunting Style	Low patrol, swoops on prey	Low patrol, swoops on prey	
Range Map	<p>Bald Eagle <i>Haliaeetus leucocephalus</i></p>  <p>LEGEND ■ Year Round ■ Summer (breeding) ■ Winter (non-breeding) ■ Migration</p> <p>Map by Cornell Lab of Ornithology Range data by NatureServe</p>	<p>Golden Eagle <i>Aquila chrysaetos</i></p>  <p>LEGEND ■ Year Round ■ Summer (breeding) ■ Winter (non-breeding) ■ Migration</p> <p>Map by Cornell Lab of Ornithology Range data by NatureServe</p>	
Notes	Became the US national symbol in 1782 because of its fierce appearance; in reality, BAEA are fairly timid and passive birds.	Became protected in 1962 after sheep ranchers killed >20,000 in 10 years. Susceptible to poison baited carcasses and powerline electrocution. Population currently stable and increasing.	
Definitions:			
Chick Development		Mating Systems	
<u>Altricial</u> : Immobile, downless, eyes closed, fed		<u>Monogamy</u> : One male, one female	
<u>Semialtricial 2</u> : Immobile, downy, eyes closed, fed		<u>Polygamy</u> : Both polyandry and polygyny	
<u>Semialtricial 1</u> : Immobile, downy, eyes open, fed		<u>Polyandry</u> : One female, multiple males	
<u>Semiprecocial</u> : Mobile, remain at nest, fed		<u>Polygyny</u> : One male, multiple females	
<u>Precocial 4</u> : Mobile, downy, follow parents, fed		<u>Promiscuous</u> : Males and females mate indiscriminately	
<u>Precocial 3</u> : Mobile, downy, follow parents, are shown food		<u>Cooperative</u> : 2+ females raise broods in same nest &/OR non-breeding females help at the nest of other breeding birds	
<u>Precocial 2</u> : Mobile, downy, follow parents, find own food			