Notes based on Joe Morlan's Ornithology class lecture May 13th, 2009.
Joe Morlan is not responsible for these notes, any errors or omissions in them are mine.

Here along the coast **migration**, especially of songbirds, tends to be kind of light. A good place to go to look for migrants at this time of the year is **Mt Diablo**, particularly up near the summit. There are a number of groves of oak trees that frequently attract flocks of migrants at this time of the year. There is a Blue Oak picnic area that's often really good and Oak Knoll is another picnic area not too far from the summit where you can find particularly warblers but also flycatchers. The birds are often just there early in the morning, but these isolated clumps of trees can be pretty nice, especially when it's foggy down below and the mountain is sticking up out of the clouds, migrating birds will just focus in on there. We don't get that kind of weather often, especially that far out into the East Bay. You can get Hermit Warblers and Black-throated Gray and Nashville, it can be a lot of fun. A lot of people prefer to bird down low on the Mitchell Canyon side which has the potential for migrants as well.
If you really want to see migration you probably need to go to **the desert**. There have been some reports from Galileo Hill in eastern Kern County, the Silver Saddle Resort is the actual name of the place, somebody reported hundreds of Swainson's Thrushes and lots of Yellow Warblers, nothing particularly rare but lots and lots of birds. On great migration days warblers are out in the creosote, they are just everywhere. And when you come to an oasis like Galileo Hill or Furnace Creek Ranch there's birds everywhere.
There is nothing though that compares with migration in the **Eastern US**. On a bad day their migration is usually better than the results that we get here. That is because they are situated north and west of South America. A lot of the neotropical migrants come from South America and their basic migration route leads over the Eastern US. We are way out in the west. Migration gets much more impressive in places like Ohio. Apparently this last weekend there was a really big wave of all kinds of birds in **Magee Marsh in northwestern Ohio**, a very good place to go in the springtime. It is at the edge of Lake Erie, the birds are coming in from both directions, from the Atlantic side and from the central US, working their way along the lake because they don't like to fly across large bodies of water. It is not particularly depending on weather like the Texas coast where you need a cold front which will make birds drop down exhausted and will also produce thousands of deaths in the Gulf. In Ohio the birds are healthy and singing. It is as good if not better than Point Pelee at the other side of the lake in Canada. The drawback is that it has become very popular and gets crowded.

The **Black-chinned Hummingbird** is a bird of the Central Valley. It occurs in lowlands mostly in riparian habitat like in trees along the Sacramento River. They are in moist areas. They kind of overlap **Costa's Hummingbird** in southern CA, but Costa's is much more of a desert bird, Black-chinned likes water. The closest place where Black-chinned can regularly be seen is Bethel Island in the Delta. They have also been found to be reasonably common in the Santa Clara Valley in local areas, but these places are long river beds with limited access and tall trees.

Blue Grosbeak occurs in second growth willow thickets in the Bethel Island area.

The **American Kestrel** is famous for hovering in an upright position and then diving. The **White-tailed Kite** is another bird that also is a classic hovering raptor, but when it drops down for food it doesn't dive, it tends to keep its wings up and then descent like a parachute with its feet first.

The **class field trip to Briones Regional Park** this last weekend was good with several nice birds like Grasshopper Sparrow and Chipping Sparrow. A single Cedar Waxwing was seen in the parking lot, which is weird since there are large flocks of them around now. Joe heard a Pine Siskin fly over but it was never seen and seemed a little odd to Joe in Briones in May, so he did not put it on the list. Since then he has seen many reports of fly over Pine Siskins from the Central Valley though.

The **mating system of the Acorn Woodpecker** (another species seen on the class field trip), possibly one of the most bizarre well documented breeding strategies of any animal:
"They are cooperative breeders and live in groups composed of up to six cobreeder males and three joint nesting females plus non-breeding helpers of both sexes. Cobreeding males are brothers and/or fathers and their sons. They are competing for matings with their joint nesting females who are sisters or a mother and her daughter who lay their eggs in the same nest cavity. Offspring produced from this communal nest may remain in the naval group for several years as non-breeding helpers, during which time they help their younger siblings at subsequent nests. This type of mating system is known as polygynandric. All individuals within the group are close relatives except that cobreeder males are not related to joint nesting females. Incest avoidance is maintained because helpers only inherit and become cobreeders following reproductive vacancies when the breeders of the opposite sex died and are replaced by unrelated birds from elsewhere. Reproductive vacancies are often filled by a unisexual set of siblings to compete against other sibling groups in spectacular events called power struggles. Winners of power struggles become cobreeders in the new group, losers return home and resume nonbreeding helper status."
You can get communes of up to 30 birds or more sometimes. Larger groups tend to be more stable and more successful. If the group becomes too small Acorn Woodpeckers are also capable of social plasticity and become monogamous and just nest like a male and female pair. But most of the ones in CA are in these groups.
They have **granaries where they store acorns** by punching holes in a tree trunk and putting acorns in there when the acorn crop is strong so they can save them for later in the season or future years when the acorn crop may fail. This way they spread out the resources from an unreliable food supply. They often use dead trees for granaries because the wood is softer. They will use live trees as long as the wood is soft (no oaks). When the stores are empty it all breaks down, the commune is not able to survive any more and they all break off and go somewhere else and try to nest. There is an old tale that the Acorn Woodpeckers don't eat acorns but they have them as a way of farming worms that eat the acorns and the woodpeckers just eat the worms. This "worm theory" is a myth that goes back a lot of years. It is still told by many naturalists but it is not true, the birds eat the acorns.

Vagrant: a bird that has migrated out of it's normal range, but that occurs often enough so that it is not outrageous to see one.

Hummingbirds

Include the smallest bird in the world, the Bee Hummingbird which is found in Cuba and nowhere else.

Have very small feet, they are incapable of walking, but will perch.

They are the only birds that are capable of flying backwards under powered flight. They can rotate their wings upside down. When hummingbirds hover they fly with their wings going up and down and back and forth in a figure 8. Most hummingbirds beat their wings about 60 times per second.

Their primary diet is nectar which they extract out of tubular flowers while hovering in front of them. It is not unusual for some of the smaller hummingbirds to feed more than their weight in nectar each day. They also feed on small insects.
The nectar is basically sugar water, it is the bait that the flowers use to get the hummingbirds to pollinate them. It provides a lot of immediate quick energy, which is what the hummingbirds need. You can feed hummingbirds artificial nectar by mixing four parts of water with one part of refined white granulated sugar by volume. Red dye is frequently used in commercial mixtures. Some people think it's bad for the hummingbirds. There is no evidence for that, but there is no evidence that it is safe either. There is really no reason to use it. Hummingbirds are particularly attracted to the color of the flowers that are blooming at any particular time, not necessarily always to red.
Hummingbirds have a very long, extensile tongue. There are grooves on the side of the tongue in which the nectar is drawn up almost by capillary action.
They can slow down their metabolism at night and under cold conditions and go torpid.

Males and females have different territories. They tend not to tolerate each other. That causes problems with mating, because they will not tolerate each other in their territories. Anna's Hummingbirds have been studied. A female will enter and feed in a male's territory. The male will chase her towards the edge of his territory or out of it where his aggressive instincts decline and copulation takes place. She builds the nest, lays the eggs and cares for the babies in her territory.

In migration hummingbirds have temporary territories. (Right now Calliope Hummingbirds are migrating through. Mt Diablo is a good place to find them, look for them in flowering Black Sage. They will have territories and defend them for a week or so and then continue on their migratory route.) The smaller the hummingbird is, the more aggressive it usually is. When there are very many hummingbirds in migration it becomes impossible for them to defend a territory that is very food-rich. It seems as though the territorial instincts are subdued by the overwhelming numbers of birds that are coming in.

(A very similar kind of phenomenon is observed in the Sanderling on the wintering grounds. We now know that a lot of Sanderlings actually defend individual territories along sandy beaches. Studies have been done on the resources that are available to Sanderlings in territorial and nonterritorial conditions. If the food resources are very, very high the Sanderlings give up on being territorial, it becomes inefficient. Areas that are less than optimal are occupied by single territorial Sanderlings in the wintertime.)

The most famous places to study hummingbirds at feeding stations are the Arizona ones. You can get ten species of hummingbirds in southeastern Arizona. Some lodges there have lots of hummingbird feeders. In Madera Canyon there is Santa Rita Lodge, and there is another one on the other side, called Beatty's Guest House. If you're not staying there you can pay a fee and can go in there. There are some feeders open to the public, but you want to see the White-eared Hummingbird, which is usually in the private area. The nature conservancy has a sanctuary, Ramsey Canyon, and they have a lot of hummingbird feeders there. But last time Joe was there you had to pay extra, stay with the group and there were fewer feeders. There is also a ranch right next to it which has hummingbird feeders. There is another place in the lowlands down near Patagonia, Marion Paton's back yard which has a lot of feeders. There is a voluntary donation to help pay for the sugar. Mary Jo Ballator has feeders at her little Ash Canyon Bed and Breakfast south of Sierra Vista. Joe went there to see the Plain-capped Starthroat and Lucifer Hummingbird.

We are quite fortunate here in CA, we have a decent variety of hummingbirds. In the eastern US it is just the Ruby-throated Hummingbird.

We are used to thinking of hummingbirds as being sexually dimorphic (males and females look different) with the females lacking the glittering gorget that the males have and also the females being horrendously difficult to identify. Birds like female Costa's, Black-chinned, Anna's, how do you tell those apart? Female Rufous versus Allen's - essentially impossible to tell apart. Joe's thought on this used to be that the bright coloration of the males was a matter of sexual selection, with females choosing the brightest colored males. This would imply that the ancestral hummingbird was drab looking and that the males evolved the bright plumage. But when you look at sexually monomorphic hummingbirds, and there are a lot of them, the females are just as bright as the males. In the tropics more species of hummingbirds are sexually monomorphic than here, and in every single case they are bright. So it appears that the bright coloration is really the primitive state and that this drab female plumage is a derived character state that has evolved in response to some kind of condition that is different. One of the differences is that some of the hummingbirds we have here are migratory species. Birds like the Green Violet-ear are not considered to be migratory, although there are records from the US, they tend to be sedentary. James Van Rensem presented a program at the Museum of Vertebrate Zoology a few months ago:

1. He hypothesized that the bright plumage was ancestral. There is evidence for that from DNA.
2. You tend to find strong dimorphism in areas where there is a high probability of predation. He particularly focused on the Caribbean and separated out those islands that do not have accipiters from those that do. The islands that do not have accipiters have hummingbirds that are monomorphic with both sexes brightly colored. The islands that do have accipiters have hummingbird species in which the females are drab.

Green Violetear

(The AOU recently removed the hyphen from the name)

OCCURRENCE

Extremely common in Middle America, ranges down into South America.
A mountain species but there are lowland records.
Most of the NA records are from Texas, but some are up to Missouri.
Two records from CA.
Has been seen in Baja.
An interesting bird that disperses to some extent, we don't really know why. Now it is almost annually in the southern US.

FIELD MARKS
Males and females look alike.
All green with a violet patch on the side of the face.
May have some bluish in the middle of the chest or belly.

VOCALIZATIONS
Joe heard them sing all day long in Costa Rica: chip - chip - chip - chip...

Buff-bellied Hummingbird

OCCURRENCE
Found in eastern Mexico and into southern Texas, a specialty of southern Texas and the Lower Rio Grande Valley.
In the wintertime it sometimes ranges as far north as Louisiana, where it sometimes comes to hummingbird feeders.

FIELD MARKS
Moderately large.
Buff colored belly.
Reddish tail.
Red bill (the only hummingbird in the area with a red bill).
(But sometimes hummingbirds of species that are not supposed to have a red bill show a red bill, like Anna's Hummingbird in which Joe has probably seen three different cases over the years. In those cases invariably the whole bill is red, all the way to the tip and both mandibles.)

Berylline Hummingbird

Closely related to Buff-bellied Hummingbird, early ornithologists sometimes considered them to be the same species, just different races.

OCCURRENCE
Replaces Buff-bellied Hummingbird in the mountains of western Mexico.
Was first found coming to feeders in southeastern Arizona.
The only one Joe has ever seen was in a nest at Ramsey Canyon, just outside the preserve.

FIELD MARKS
Fairly large.
Bronzy colored tail.
Red lower mandible, dark upper mandible.
Tends to be darker on the belly than Buff-bellied Hummingbird.
In flight a rusty orangy cinnamon color in the wings that is not shown particularly when the wings are folded, a feature that you don't see in Buff-bellied Hummingbird.

These birds don't overlap at all, are more likely to be identified from each other by range. If you are in Texas it's a Buff-bellied, if you are in Arizona it's a Berylline.

Violet-crowned Hummingbird

OCCURRENCE
Used to be a very rare visitor to southeastern Arizona. Has become regular and is now breeding in parts of southeastern Arizona and southwestern New Mexico.
The best place to see it in Arizona is Marion Paton's back yard in Patagonia.
Vagrants have occurred occasionally into southern CA. Joe has seen it in San Diego, Ventura and Sonoma counties.

FIELD MARKS
Pretty large.
Very elegant bird.
Males and females look alike.
The only hummingbird in which the entire underparts are snowy white.
Red bill with a dark tip.
Usually a violet or blue crown, particularly the forecrown (not always, depends on the age and a little bit on the sex).
These colors on the hummingbirds can be hard to assess in photos, particularly because of difficulties with iridescence and the light angle.

Lucifer Hummingbird

OCCURRENCE
Has never been recorded in CA
Rare anywhere in the US. Do occur in west Texas as well as very rarely in southeastern Arizona.
The only place where Joe normally sees them is at Mary Jo's place south of Sierra Vista, has also seen one years ago at Ramsey Canyon. Can also be found at Big Bend National Park around the ranger's houses where they have bird feeders.
The picture in the book shows them feeding on Century Plant which seems to be their favorite flower

FIELD MARKS
A very small desert hummingbird, rather similar in some ways to Costa's Hummingbird.
MALE
Magenta colored throat in the males that extends strongly to a point.
Notice that Costa's Hummingbird has purple on the top of the head as well as on the throat and has a short, straight bill.
Long, curved, dark bill the main field mark (both sexes). Be a little cautious because some other hummingbirds have bills that are slightly curved, and sometimes hummingbirds may have deformed bills.
FEMALE
Female quite different.
Orange on the sides.
Dark line along the sides of the face that outlines a pale postocular stripe.