

Notes based on Joe Morlan's Ornithology class lecture February 17th, 2010.
Joe Morlan is not responsible for these notes, any errors or omissions in them are mine.

Are **hummingbird displays** courtship, as the PBS documentary claims, or territorial?

Hummingbird displays are territorial and agonistic, they are designed to defend a territory and chase off other individuals, either males or females.

There is no pair bond in hummingbirds, courtship behavior is not well known because you can't watch them as a pair. Anna's Hummingbird has been studied. Females have separate territories from males, males will not tolerate females within their territories. Males will often abandon spring territories after the females are set up or sometimes even before. So it is possible for a female to occupy a former male spring territory as a nesting territory.

Females go into a male's territory to mate. He immediately starts displaying like crazy since he does not want to share any of his resources with any other hummingbird regardless of whether it is a female. The strength of a male's territorial instinct is almost directly related to the distance from the center of his territory. The further he is away from the center, the less strong are his aggressive instincts. The male displays to drive the female out and she moves towards the edge of his territory where his territorial instincts are weaker. She does a pose which for lack of a better word is called a submissive display or a submissive posture. This makes the male realize what he is supposed to do and mating takes place right on the edge of his territory.

So we know the display serves territorial purposes. It might well serve courtship purposes also, similar to the situation in many other birds where the song of the male is both territorial and serves to attract females. The question is if females use features of the diving display when choosing a male to mate with. We do not know that since these birds are so difficult to study.

Sunol Regional Park is a good place for **eagles**. Joe has seen Golden Eagles there. Bald Eagles tend to occupy **Calaveras Reservoir** just to the south which can be accessed by Calaveras Road. During the last few years Bald Eagles have nested or attempted to nest on some high tension pylons at the reservoir, often visible from the road. Bald Eagles have cruising ranges which can be quite large, they drift around away from the reservoir sometimes and could be seen from Sunol Regional Park. De Valle is another location where Bald Eagles have nested in the past, the first Alameda County nesting record for over a hundred years was in a Gray Pine there.

There is an adult male **Rose-breasted Grosbeak** wintering in the Arboretum. The Rose-breasted Grosbeak is a vagrant to CA with most records in the late spring. The species has nested, although most nesting attempts have been hybridization with Black-headed Grosbeak because it is hard to find another Rose-breasted Grosbeak when they get here.

It is a highly migratory bird. It ranges fairly far west to the north of us, there are a number of possible scenarios that could bring the Rose-breasted Grosbeak to CA.

The species has wintered annually in CA. Most of those records are at bird feeders. All winter records and most other records are from the coast. The Black-headed Grosbeak occasionally winters at the coast, also usually at feeders. It is mostly absent in the wintertime. If you find a bird out of season it is not necessarily going to be the one that is expected in the regular season. In many cases the one that is least expected is more likely when you have an out of season bird. In this case the Black-headed Grosbeak is slightly more common in the winter though. Every grosbeak in the winter is an unusual sighting, you should not make an assumption as to which kind it is. The females are hard to tell apart.

Joe is aware of only one **apparent hybrid between the Say's Phoebe and the Black Phoebe**. It was photographed in Humboldt Bay.

(I assume it is this bird: <http://www.pbase.com/gwwarbler/phoebe>)

If there is a pair of phoebes at Heron's Head, keep in mind that the Black Phoebe would nest there, but the Say's Phoebe is not known to breed in San Francisco or in San Mateo County. Joe found a nest some years ago in southern Alameda County, where it is still very scarce. Say's Phoebe is a bird of the foothill regions. It gets more common as a breeding bird in the desert regions and the San Joaquin Valley. It does range fairly far north. It is quite scarce towards the immediate coast, where it is a winter visitor only. The Black Phoebe is not considered to be migratory, so that bird will probably just stay at Heron's Head..

Superspecies

A superspecies is a group of very closely related species that are called **allospecies**.

Allospecies are **parapatric**, which means that their breeding ranges do not or just barely overlap, the ranges fit together like the pieces of a jigsaw puzzle.

This is very similar to the **subspecies concept**. If you have a single species that has geographic variants that are named subspecies, they do not overlap each other. A species that has multiple subspecies is called a **polytypic species**. Each subspecies occupies a unique home range.

If you have a group of similar, closely related populations of birds whose ranges do essentially not overlap you have to make a decision if they are subspecies of a species or allospecies of a superspecies. You make this decision depending on how different they are or what you know about their biology, whether or not the birds are reproductively compatible. Allospecies have to be good biological species, they have to show some evidence of reproductive isolation. However, because they are allospecies they don't have a contact zone or a limited contact zone. If they touch each other you can look whether or not there is gene flow across that boundary, if there is gene flow, whether there is a lot or very little. You make a decision based on activity, reproductive compatibility in a contact zone if there is one.

Tonight we study two examples of superspecies.

The Golden-fronted, Red-bellied and Gila woodpeckers form one superspecies.

In South America there are more members of this superspecies, like the Hoffmann's Woodpecker of southern Honduras, Nicaragua and Costa Rica or the Red-crowned Woodpecker which ranges from southwestern Costa Rica across Panama, Venezuela, Colombia and into Tobago, skipping the island of Trinidad.

The Northern and Gilded Flickers form another superspecies.

Golden-fronted, Red-bellied and Gila woodpeckers

Vocalizations and overall appearance the same. Pretty much in-your-face loud woodpeckers, you will notice if you find yourself within their range.

There is a little bit of overlap between the Red-bellied and the Golden-fronted in Texas, but they essentially replace each other. Then the Gila is way out left field in the arid deserts.

All members of this group are non-migratory. Vagrancy does not seem to occur.

Golden-fronted Woodpecker

OCCURRENCE

Confined to Texas, eastern Mexico and Central America barely into Nicaragua.. Non-migratory. The Golden-fronted Woodpecker is a common and conspicuous bird throughout much of Texas. Occurs in a variety of habitats, woods, edges or clearings of woods, villages, towns, gardens and parks. It is probably the most common woodpecker in most of those places. Pretty bouncy flight.

FIELD MARKS

Gold coloration on the forehead.
Male has red on the top of the head which the females lack.
Gold or reddish color on the back of the head.
Yellow wash on the belly between the legs.
Rump white.
Tail all black.

VOCALIZATIONS

Quite loud and noisy. A sort of rich, loud churring call is frequently given in flight

Red-bellied Woodpecker

Named for the red wash on the belly between the legs. In the museum tray, where the birds are normally seen lying on their backs, this is the most noticeable thing about them. It is generally concealed against the tree trunks and one of the most difficult field marks to see.

OCCURRENCE

The most widespread of the three species.
Throughout much of the eastern US.
Hardwood forests, towns, parks, edges from Florida to Texas and all the way up into the Great Lakes region and the upper Mississippi Valley. It has spread into southern New York and is spreading into New England. It formerly had a core range basically up to the Mason-Dixon line and it has been gradually spreading northward over the last century. When Joe grew up in downstate New York there were no Red-bellied Woodpeckers there. They are now common.

FIELD MARKS

Males have the entire crown, nape and the back of the head all red.
Females red nape and forehead, interrupted by the grayish crown.
Rare females can have yellow instead of red on the head.
The coloration of the forehead is usually a little bit paler than on the rest of the crown. In some birds the forehead is more brown.
Rump white speckled with black.
Central tail feathers white with some black barring.
The reddish central belly is an extremely arcane field mark.
Sibley illustrates a **population in south Florida** (*Melanerpes carolinus perplexus*).
The males have a small gap in the red coloration on the front part of the crown behind the forehead..
The central tail feathers are all black.

Gila Woodpecker

OCCURRENCE

Arid areas of Arizona, parts of New Mexico and extreme southern CA, where the bird is not rare along the Colorado River. It ranges west in CA as far as the Salton Sea. It occurs regularly in the town of Brawly in a place called Cattle Call Park. The residential areas around Cattle Call Park have Gila Woodpeckers in small numbers. There is also a hospital down there and on the grounds of that hospital they are fairly regular. That is as far west as the Gila Woodpecker is known to occur in the US.

A low desert bird. They love saguaros, so do Gilded Flickers.

Completely non-migratory, as are the other members of this superspecies

But: in June 1996 there was one in Sutro Heights Park! It flew around in the Norfolk Island Pines. It was not easy to see, moved around a lot.

FIELD MARKS

Male has a red spot on top of the head, otherwise unmarked head without red or yellow on nape or forehead.

Rump and central tail feathers barred black and white.

Central belly with yellowish wash.

The female Williamson's Sapsucker is a migratory bird that is somewhat similar.

Flickers

Large, quite spectacular and fairly common woodpeckers.

Historically recognized as three separate species: Yellow-shafted Flicker in the east and north, Red-shafted Flicker in the west and Mexico and Gilded Flicker in the desert southwest.

HYBRID ZONE

A long hybrid zone falsifies the theory that the Yellow-shafted and the Red-shafted are separate species. Within that hybrid zone a good 95% of the individuals seen are intermediate in appearance, indicating relatively free gene flow across that boundary and that there is no barrier to reproductive compatibility although the two parental types look dramatically different. They do not discriminate in mate choice. The hybrid zone appears to be expanding, which indicates that the hybrids are not at a selective disadvantage. They have no difficulties finding mates, the hybrids are not discriminated against by either of the parental types or by other hybrids. There are many generations of hybridization and lots and lots of variation within that hybrid zone. The existence of this hybrid zone resulted in the lumping of the Yellow-shafted and Red-shafted into the Northern Flicker.

INTERGRADES

The hybrid zone is wide, it is not going to happen that a pure Yellow-shafted pairs up with a pure Red-shafted to raise hybrid babies. Across the hybrid zone there are many intermediate birds, they have hybridized with each other for many generations. The individual birds can have any proportion of genes from the two parental types, only occasionally will the proportion be 50-50. Intergrade is a better word for this than hybrid.

In the periphery of the zone some intergrades may hybridize with pure birds. The intergrades at the periphery are most like the adjacent pure birds. A better way of thinking about it is gene flow across the hybrid zone. Think of Red-shafted genes creeping across one way and Yellow-shafted genes creeping across the other way. If you think about it that way the chances are nil of two different pure birds hybridizing with each other.

SUBSPECIES GROUPS

The Yellow-shafted and Red-shafted are subspecies groups. Within both populations several subspecies have been named that differ slightly from each other. The taxonomy does not really fit this situation where you have two distinctly looking groups of birds with additional geographic variation within them. We say that there are two subspecies groups and within each group there are multiple subspecies.

THE GILDED FLICKER IS ECOLOGICALLY ISOLATED

At one point it was decided to lump in the Gilded Flicker along with those other two. There are some hybrids in a limited area where Gilded Flickers come into contact with Red-shafted Flickers. The Gilded Flicker occurs in the desert. There are river courses in Arizona with sycamores which are occupied by Red-shafted Flickers. They live in the same geographic area but they have a different ecological niche. Revision of the hybridization data showed that the hybrids are quite rare, there is ecological isolation.

This is a nice example where a decision had to be made whether or not the Gilded Flicker and the Northern Flicker are a superspecies, the way they are treated right now, or whether the Gilded Flicker is just a subspecies.

OTHER FLICKER SPECIES

There are several more different species of flickers in Middle and South America. The endangered Fernadina's Flicker is endemic to Cuba. Joe's favorite is the Andean Flicker. It is huge. It lives above the tree line. Joe encountered it in Bolivia where there is not a tree to be seen. It feeds on the ground and it nests by digging holes into earth embankments.

Northern Flicker

OCCURRENCE

Yellow-shafted in the north and east of NA and all the way up to Alaska, the Labrador peninsula and Newfoundland.

Hybrid-zone from Alaska and British Columbia through parts of Alberta and Kansas and Nebraska to the panhandle of Texas.

Red-shafted ranges up to Queen Charlotte Island, down through the intermountain west and well down into Mexico.

Migratory, during the non-breeding season you cannot identify the types by range. During the breeding season you can unless you are in or near the hybrid zone.

We get birds from the hybrid zone in British Columbia in the Bay Area in winter and migration, they are not very unusual.

We could get pure Yellow-shafted in the wintertime also. If Alaskan birds migrate due south they end up in CA. Many pure Yellow-shafted are claimed in CA each winter. When Dr. Binford went through the entire collection of specimens at the Academy of Sciences he found no pure Yellow-shafted. All of the ones that were labeled Yellow-shafted had some indication of Red-shafted genes in them.

Northern Flickers frequently forage on the ground, devouring ants.

FIELD MARKS

Underparts buffy with circular polka-dots.

Black bib.

Back brownish tan with black bars.

Yellow-shafted:

The central shafts (rachis) of the flight feathers and the undersides of the wings and the tail are yellow. Normally not or barely visible on a perched bird.

Crisp face pattern with a warm tan color including the eye, sharply separated from gray on the crown and on the back of the head.

Males have a black moustacial stripe.

Red crescent on the back of the head in both sexes.

Red-shafted:

The central shafts (rachis) of the flight feathers and the undersides of the wings and the tail are red. Normally not or barely visible on a perched bird.

Face gray under the eye, crown and upper face brown with gray coming up on the nape and blending with the brown crown.

Males have a red moustacial stripe. A pale brown ghost of the male's red moustacial may be seen in females.

No crescent on the back of the head.

Intergrades:

Any combination of the field marks of Yellow-shafted and Red-shafted. The color in wings and tail can be orange. The red nape crescent of the Yellow-shafted is a dominant trait, a majority of the intergrades has it.

Gilded Flicker**OCCURRENCE**

In CA it occurs marginally in San Bernardino County near Cima Dome where it occupies Joshua Tree habitat, and probably nowhere else. Go there in April or early May. Keep your eye open for Bendire's Thrashers. It is one of very few localities in CA where the Bendire's Thrasher breeds. Accessed off of interstate 10 on the way to Las Vegas. Basically a road that runs out of the town of Baker. Part of the Mojave National Monument now. It used to be a great vagrant trap. Santa Fe Railroad had a train station there, with people living there, a lawn and water, it was a wonderful oasis, but it's gone way downhill, they don't water it anymore.

Non-migratory.

FIELD MARKS

Slightly smaller bird.

Superficially has the body of a Yellow-shafted and the head of a Red-shafted.

This combination is shown by some intergrade Northern Flickers. Birds like that have been called in to the rare bird alert from time to time. Be sure to check all field marks!

The spots on the underparts tend to be more squashed or oval than circular.

Mantle color paler, black streaks thinner.

It is more of a desert kind of color, birds that live in arid areas tend to be paler and have less pigment. (The Northern Flicker looks more like a bird that lives in a wet climate with a dark brown back and bold black bars.)

More black on the tip of the tail (on the underside).

Gray face, all brown crown and nape, no red crescent.