Tchet Notes based on Joe Morlan's Ornithology class lecture December 3rd, 2009.
Joe Morlan is not responsible for these notes, any errors or omissions in them are mine.

The **juvenal plumage** is the first full set of contour feathers that a bird gets. The term applies to all birds. Some birds go right into it, others start out with a fluffy type of plumage called natal down. E.g. chickens and ducklings are first covered with natal down. Then they get actual contour feathers. **Contour feathers** are feathers that have a vane, a shaft all the way through it and webbing on either side, the feathers are flat.

In the past, in the 19th century, this was called the first plumage. Since there was some confusion as to what the first plumage was it was decided to use the term **juvenal**, rather than the term **juvenile** which at the time simply meant young bird. The term juvenile should probably not be used to describe a bird unless it is in juvenal plumage. The old view was that a juvenile was a bird in its first year of life, regardless of its plumage. This leads to a whole lot of misunderstandings.

The editor of Birding Magazine recently decided that the term juvenal was actually intended as a joke and that everybody understands the term juvenile and that this strange term had no value. In the current issue of Birding there is a letter to the editor about the subject by Joe, link on his website under Publications.

The juvenal plumage is homologous to a basic plumage since it is acquired by a complete molt. That is the reason the term **formative plumage** was coined for the plumage many birds acquire in their first fall, replacing part of their juvenal plumage. It used to be called the **first basic plumage** because it often is similar to definitive basic plumages, but is acquired by a partial molt. Only the body feathers are molted, the birds keep their juvenal flight feathers. The real first basic plumage is the juvenal plumage, it is the first plumage that is acquired by a complete molt. To be consistent in the use of basic and alternate plumages we should go back and rename the juvenal plumage and call it first basic. The problem is all the literature, including Humphrey and Parkes, where the term first basic plumage is used for the formative plumage. It would be very confusing to now use that term for something else. It is better to retain the term juvenal because it is well established, but to substitute the term formative for what used to be called first basic. So now there is nothing that is called the first basic plumage.

The term juvenile is frequently misused, especially when people talk about juvenile sparrows.
Usually in **sparrows** the **juvenal plumage** is very **brief**.
With a few exceptions the juvenal plumage in sparrows is streaky.
White-crowned Sparrows have a streaky **juvenal** plumage when they are still begging from their parents.
Then they molt into **formative** plumage in which they have the brown crown stripes.
When they get their black stripes they are in **definitive basic** plumage. It is called definitive because there is no change from year to year in the appearance.
There are some exceptions in which the juvenal plumage is not so brief. For example in the **Chipping Sparrow**. In August we get lots of Chipping Sparrows migrating through the Bay Area, where the birds do not breed, and they are in juvenal plumage. Some of them are really streaky, some not so streaky.

The term **immature** is a good one to know because you can't be wrong using it unless the bird is an adult. If it is in any stage before full adult it can be correctly called an immature. It is a casual term for a bird of which you don't know what plumage it is in. There is no associated plumage

with the term immature. There is an immature bird. It may be in juvenal plumage, it may be in formative plumage, it may be in first alternate plumage, but there is no such thing as immature plumage. For example the White-crowned Sparrows with brown crown stripes are immature birds in formative plumage.

In **hawks** many of the field guides show pictures labeled immature. The funny thing is that the juvenal plumage in most of the hawks (*accipiters* and *buteos*) is retained until the following spring, so we see these birds all winter long in their juvenal plumage.

In **warblers** the **juvenal plumage** is also very **short-lived**, it is lost within a couple of weeks from fledging. There are very few pictures of warblers in juvenal plumage in the field guides. The birds do not migrate in juvenal plumage, they are only seen around the nesting grounds. Usually they are still dependant on adults. Sometimes they may disperse a little distance in that plumage but they don't usually go far.
The birds are going through their preformative molt before long distance migration, acquiring their formative plumage. You can call those birds immatures.
Two species of warblers commonly breed around the Bay Area: Wilson's Warbler and Orange-crowned Warbler, so you can see those here in juvenal plumage.
Wilson's Warblers in juvenal plumage do not have the black cap. They have fluffy white feathers that are sticking out and they don't look all that bright yellow necessarily.
Orange-crowned Warblers in juvenal plumage frequently show wing bars or at least a trace of wing bars, they get easily misidentified.
Joe saw a juvenile Yellow-rumped Warbler in June way out at the end of Pt Reyes. Yellow-rumped Warblers breed in Bolinas Ridge, which is not that far from Pt Reyes.

Many times you have to figure out the age of a bird or what plumage it is in before you can figure out what species it is because different ages of the same species have different suites of field marks.

People often talk about juvenile **shorebirds** and are correct, we see them it that plumage here. In almost all cases (Dunlin is an exception) the arctic shorebirds have a strategy where the juveniles are abandoned on the breeding grounds. The adults migrate in June-July and leave their young which migrate several weeks later. Interestingly the migration routes taken by the adults and juveniles are not the same. The juveniles have some kind of genetically encoded instinct about in what direction to fly and how far to fly. They do this and end up on the wintering grounds, but they don't take the same path as the adults. They tend to migrate much more slowly, they stop over, and they tend to occur away from the main migration route more often than the adults. For example we never see an adult **Baird's Sandpiper** migrating in the fall on the West Coast. In Bolivia at 15,000 feet way above any forest Joe saw adult Baird's Sandpipers at the saline lakes that had just arrived from the far north, probably without stopping. They know where to go but the actual process of getting there is much more purposeful when the birds are adults. The formative plumage in shorebirds is usually acquired on the wintering grounds and looks similar to definitive basic plumage.

The **House Wren** is mostly a summer visitor to the Bay Area. It tends to occur in oak woodland and grasslands in the foothills and is not particularly common along the immediate coast. If you go out into the Livermore Valley or even Tilden Park in the springtime you may be able to find lots of them singing away, they are very loud songsters. They are not really supposed to be here in the wintertime. But in areas along water and where there are vines that are blooming, including exotic plants like German Ivy and some type of plants like mallows, there are enough insects in those habitats to support House Wrens. Joe sees House Wrens along the immediate coast usually

in the fall and in the winter. They are not really breeders right along the immediate coast. Not sure if they require a detailed writeup for the CBC. They are almost annual, usually someone will find a House Wren somewhere. One of the traditional places for wintering House Wrens in SF for CBCs is Lobos Creek. They have a ratchety little whiny call. They can be quite shy and are often easier detected by their call.

Ruddy Ducks and **Redheads** are brood parasites similar to the Brown-headed Cowbird. The difference is that these ducks are not obligate brood parasites. They are perfectly capable of building their own nests and taking care of their own babies. Furthermore they don't necessarily lay their eggs in the nest of another species. That may happen but it is more common for them to lay their eggs in another nest of the same species. The phenomenon is usually called **egg dumping**. It happens with some frequency but it is not the main way of breeding.

Ring-necked Duck

OCCURRENCE

Breeds across southern Canada an up into Alaska. Mostly in areas that are fairly heavily wooded, although it does get up into some tundra-type habitat.
A very common winter visitor to the Bay Area.
Has probably increased in the last 34 years as a winter visitor to the Bay Area.
Prefers in general sheltered ponds. Avoids areas with lots of human disturbance, but seems to be adapting gradually to human encroachment which may be resulting in what seems to be an increase in their numbers.
Occurs regularly on some of the little lakes around GG Park, Lloyd Lake frequently has some. Some places, like Crystal Springs Reservoir, may get hundreds of them. They tend to occur on fresh water bodies rather than on the bay or on the ocean.
Stanford University campus is another place that frequently gets quite a few.
May associate with flocks of Lesser Scaup.

FIELD MARKS

Distinctive head shape.
The head is rather narrow. It looks like part of the back of the head is missing. There is a big peak, mostly consisting of feathers, but the skull itself is also very narrow and rather peaked. This is accentuated by loose feathers on the crown. Both sexes have this head shape but it is more accentuated in males.
Rather long tail. The tail is sticking up when the birds are in a relaxed pose, when they are sleeping. May be pressed against the water when they are actively diving. The tail is used for extra leverage when they are submerging. All of the diving ducks have relatively long tails compared to surface feeding ducks, they all use their tails to press against the water when they are trying to get down under the water. Their feather clothing is completely waterproof and it also insulates from the cold water by trapping air underneath the feathers. This means these birds are wearing floats all around their bodies, it is difficult for them to submerge. The long tail is sometimes used for extra leverage to get them under the water. Not every duck with a long tail sticking up is a Ruddy Duck!

In flight no white on the secondaries or primaries from above. There is white on the underside of the wing. The upper surface of the wing is pretty uniform, the secondaries and primaries are gray. Scaup in flight show white secondaries. The Redhead shows gray secondaries just like the Ring-necked Duck.

Basic (Bright) Plumage Male

Gold colored eye in adult male.
Head iridescent purple.
Between the purple head and the black chest there is a dark, coffee-brown ring which gives the bird its name. It is not normally visible in the field. It is certainly not a useful field mark.
Broad black tip to the bill and a white ring just behind the black tip.
The males have white around the base of the bill as well as the obvious white ring.
Solid black back and pale sides. The only other *Aythya* duck like that is the rare Tufted Duck.
The pale sides tend to be washed with gray.
A white crescent at the front part of the pale sides extends from the waterline up towards the base of the neck. It forms a finger or indentation in front of the black. This white mark is usually visible from far away.
Tail black.

Female

Pretty uniform cold brown colored bird with a dark cap that blends with the gray face and neck.
No white on the base of the bill, but the white ring behind the black tip is usually present. They can have white feathering around the base of the bill similar to scaup.
Eye dark. Only the female Ring-necked Duck has dark eyes, however young scaup and Tufted Ducks may also have dark eyes.
Usually a pale eye ring and sometimes a postocular stripe.

Differences from female Redhead:
The Redhead has a warm brown head, not the grayish cast.
The colors of the Ring-necked Duck are quite cold, the Redhead is a warmer brown bird all over.
Usually you can see some contrast between the dark scapulars and the paler brown sides and flanks on the Ring-necked Duck, less contrast on a Redhead whose body is more uniformly warm brown.
Ring-necked has a very narrow face and a peaked crown, Redhead has a spherical head shape.

Differences from female scaup:
Scaup have a more solidly brown head. They don't have the exaggeratedly peaked crown, they don't have a white ring around the tip of the bill. They may have a little bit of pale towards the tip of the bill but it does not show up as a distinct white ring. That white ring subtends a broad black tip, no species of scaup has that much black around the tip of the bill. Female Ring-necked Ducks have brown eyes, female scaup at least as adults gold colored eyes. Female Redheads also dark eyes. Female scaup do not have an eye ring.

Tufted Duck

OCCURRENCE

Eurasian species, ranges from western Europe clear across to eastern Siberia (now called the Russian far east).

Spills regularly over into Alaska. There are records all the way down the west coast. A pattern of occurrence that supports the idea that a Tufted Duck seen in CA could be wild. We except Tufted Ducks as genuine wild strays unless there is evidence to the contrary.

The books frequently say that they associate with flocks of Ring-necked Ducks, Joe has never seen that. The ones Joe sees are usually in flocks of scaup and Canvasbacks. In CA they show up with migratory ducks each year. Quite often there will be a bird coming back to the same place year after year. There has been one at Lake Merritt for some years now. Some years there are quite a few Tufted Ducks and the Bay Area seems to get most of them. A few get down into southern CA.

Found both in sheltered bays like SF Bay, estuaries like Lake Merritt and sometimes on deep reservoirs like Lake Hennessey in Napa County.

Most CA records are of males, probably because they are more likely to be noticed.

Tufted Ducks in CA rarely oversummer, usually they don't arrive until maybe November.

Many of these ducks migrate in alternate (eclipse) plumage, which is female-like. They arrive in October or November and appear to be all females and then they molt into basic (bright) plumage males. You get the sex ratios very much skewed towards female birds in the late summer and fall and more equal later. Several years ago there were one or more Tufted Ducks that showed up annually in Limantour. They would be reported as females when they arrived and then they would be replaced in January by male Tufted Ducks.

Like most species of waterfowl Tufted Ducks are kept in captivity and do escape.

Migration in ducks is a learned behavior and they stay in family groups. If your rarity does not migrate that is an indication that it probably is not a wild bird. However, they may habituate with a group of wild ducks and take social cues and migrate together with them.

FIELD MARKS

Superficially similar to the Ring-necked Duck.

Gets its name from a tassel of feathers that extends off the back of the head and hangs down.

Head shape very spherical compared to the peaked lopsided looking crown of the Ring-necked Duck.

Approximately intermediate in size between Grater and Lesser Scaup.

Wing stripe: extensive white on the secondaries and the primaries, the wing pattern is similar to that of Greater Scaup.

Basic (Bright) Plumage Male

Black back like Ring-necked Duck.

The entire sides and flanks are gleaming white.

Head with purple iridescence.

Bill bluish-gray at the base with a broad black tip, not nearly as broad as on Ring-necked Duck, but more than on either scaup. There is some pale behind it but it does not form a distinct ring, it is more diffuse. Also no coffee-brown collar.

The length of the tuft varies a lot. It can sometimes be slicked down and not be seen.

Alternate (Eclipse) Plumage and Immature Male
Gray smudging all over the sides and flanks and very little of a tuft.

Female
Shorter, less obvious tuft. Seems to lack distinctive field marks.
Uniform brown duck with darker scapulars contrasting with paler sides, a ghost image of the black and white pattern on the male, similar to female Ring-necked. More contrast than in female scaup.
Some have some white by the base of the bill. Rarely as much as on a scaup.
Bill blue-gray. Broad black tip on the bill, less than on Ring-necked.
Eye yellow or orange colored in adults.
Whitish undertail coverts a variable character although most female Tufted Ducks tend to show it.
The real problem birds for confusion are not female scaup but immature male Greater Scaup that resemble females but lack the white face. That is a serious identification issue that is not treated in our books. First year birds are female-like, they will gradually molt into a more male-like plumage. We see them early when they arrive in October, November. By January, February they will already look much more male-like.

Greater Scaup and Lesser Scaup
Two species that are almost identical.

Joe is not aware of any known hybrids between Greater and Lesser Scaup, but a hybrid would be extremely difficult to identify. The Tufted Duck sometimes hybridizes with the Greater Scaup. There is a picture in Sibley of such a hybrid. It basically looks like a Tufted Duck but it does not have a solid black back. Instead it has a dark back with narrow pale vermiculations, which is the inverse pattern of the back of the scaup (scaup has a pale back with narrow dark vermiculations). This is something to be aware of, such hybrids have shown up in CA.

OCCURRENCE
Greater Scaup more northerly than Lesser Scaup, Greater also spread through Eurasia.
Greater Scaup much more patchy distribution.
Greater Scaup more coastal, less likely to be found inland.
Lesser Scaup confined to NA
In the Bay Area both species are common in winter.
When the birds are in big rafts out at SF Bay you may not be able to tell which species they are.
Greater Scaup used to be much more scarce in the Bay Area than it is today. Its numbers have increased dramatically. It has been most noticeable at Lake Merritt. 30 years ago it was a project to try to find the few Greater Scaup that were out in the middle of the lake among lots and lots of Lesser Scaup everywhere. Now you go to the duck feeding area and Greater Scaup are as numerous if not more numerous than Lesser Scaup and they are right at your feet. Formerly the Greater Scaup was just out in the middle of the lake. They tend to prefer deeper water.
Lesser Scaup breed in CA, Greater Scaup don't.

DISTINGUISHING FIELD MARKS

These are all matters of degree, each one of them requires you to make a judgement.

Greater Scaup is very slightly larger than Lesser Scaup.

Head shape:

In Greater Scaup the head appears to be rather spherical in shape.

In Lesser Scaup it looks as though a part of the back of the head is missing. The head appears rather peaked like there is a notch at the back of the head, a little like the Ring-necked Duck but without the big bulbous extension.

The different head shapes are caused in part by differences in the shape of the skull. But they are also caused by the feathering on the top of the head. Lesser Scaup tend to have feathers on the top of the head that stick straight up which makes the crown appear more peaked. Greater Scaup appear to have a more Mallard-shaped head.

The Greater Scaup looks like it has fat cheeks, like a chipmunk with a bunch of nuts in its mouth. The head is not only longer front to back, but it is also wider side to side.

On photos in profile on the water in general the length of the head of Greater Scaup is one third of the length of the body, on Lesser Scaup its one fourth.

Head shape can be deceiving because much of the head shape is feathers. What the feathers do will alter the head shape itself.

Bill:

The nail is a hard, hornlike structure that forms a hook at the tip of the bill. There is a black spot where the nail is, the size and shape of this spot differs between the two species.

Greater Scaup has a blob of black at the tip. It is almost as broad as it is deep. Looking down on it from top it looks like a triangle. On Lesser Scaup it is more like a little strip of black that is as narrow in front as it is in the back without splaying outward into a triangle. The differences are subtle and difficult to see when the bird is in profile.

The black on the nail is more difficult to assess on females because there is less contrast between the black and the gray. The whole bill may appear to be dark in which case it gets really hard to assess the shape of the black nail.

The bill is somewhat larger in Greater Scaup, the main difference is that it is broader at the tip, which is best seen when the bird is facing you.

Wing:

The secondaries are white on both species. The difference is on the primaries. The Lesser Scaup has dark primaries. The white is confined to the secondaries, a little white rectangle on each wing.

The Greater Scaup has the white extending out onto the primaries and then fading out towards the tip of the wing.

There is more white on males than there is on females in both species.

Basic (Bright) Plumage Male

Head color:

You can not rely on head color to identify scaup. Joe does not think it is useless though. If you see a scaup in good light with an all green head it very likely is a Greater Scaup. If you see one with a purple head it could be either one. Most Lesser Scaup show a mixture of purple and green.

Sides:

The amount of white on the side varies between the two species. Adult Lesser Scaup usually have gray vermiculations on the sides while Greater Scaup tend to be more uniformly white. The sides are constantly getting whiter as the gray vermiculations are wearing off during the course of the winter. But if you have both species together at the same season, Greater Scaup usually show more white.

Both species may show brown feathers mixed into their feather coat. These are a sign of immaturity or retained eclipse plumage feathers.

Alternate (Eclipse) Plumage Male

Head shape not useful to distinguish the species in this plumage. The feathers are much shorter than in basic (bright) plumage. The head shape is altered, the head is much flatter, giving the impression that the eye is moved up towards the top of the head.

Overall browner (both species).

Both species frequently show a ring around the neck in this plumage.

Female

The females are trickier to distinguish than the males.

Uniform brown colored bird, not much contrast between the scapulars and the sides, just a little paler on the head and sides.

Gold colored eye as adults. Immatures have brown eyes, they may retain that through the first summer.

Females of both species have a white patch of variable size between the base of the bill and the eye. Sometimes it looks like the whole face is white, other times it looks more like a white spot, almost like a Bufflehead or Goldeneye type of pattern.

White belly.

Head shape a little less exaggerated than in males.

Alternate Plumage Female (Summer)

As in males, head shape is not useful to distinguish the species in this plumage. The feathers are much shorter than in basic (bright) plumage. The head shape is altered, the head is much flatter, giving the impression that the eye is moved up towards the top of the head.

Both species get a pale spot on the cheek behind the eye in this plumage.