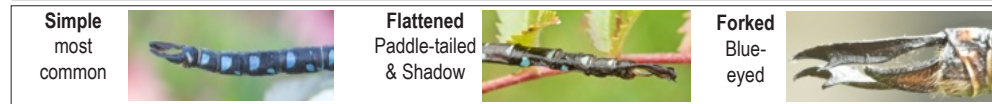


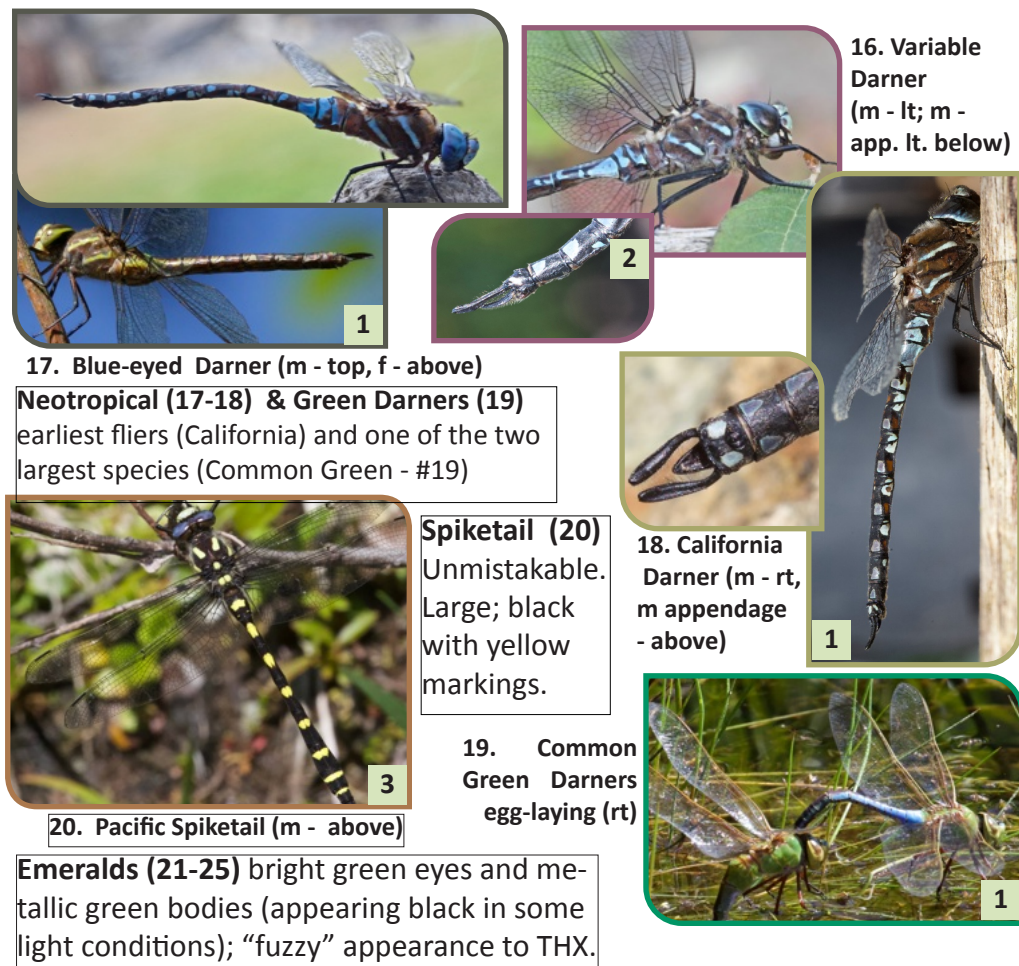
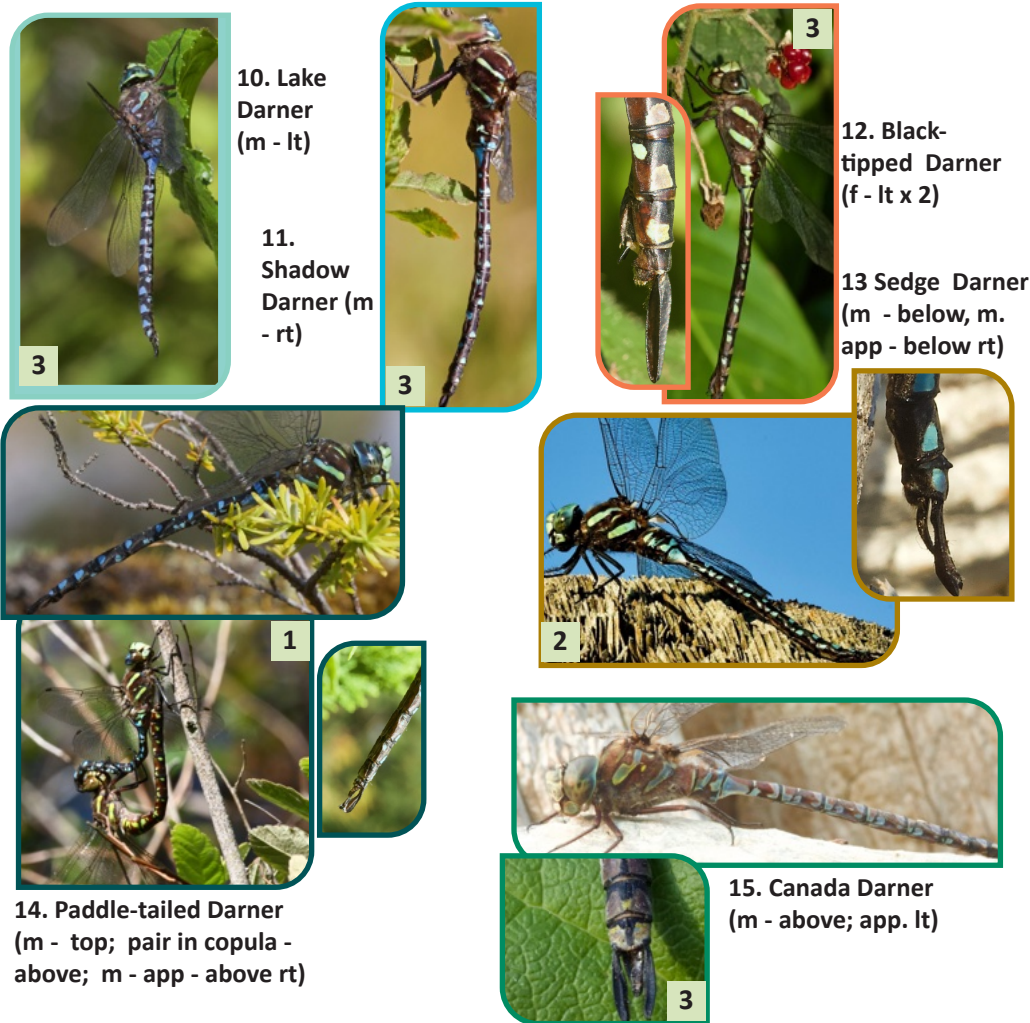
DRAGONFLIES - Suborder Anisoptera

Dragonflies are strong fliers, with 2 pairs of differently shaped wings, never held closed together vertically above the abdomen. Eyes are large, usually touching by varying amounts in the midline. Males grasp females on the top of the head, compared to just behind the head on the prothorax in damselflies. Length 28 - 75 mm.

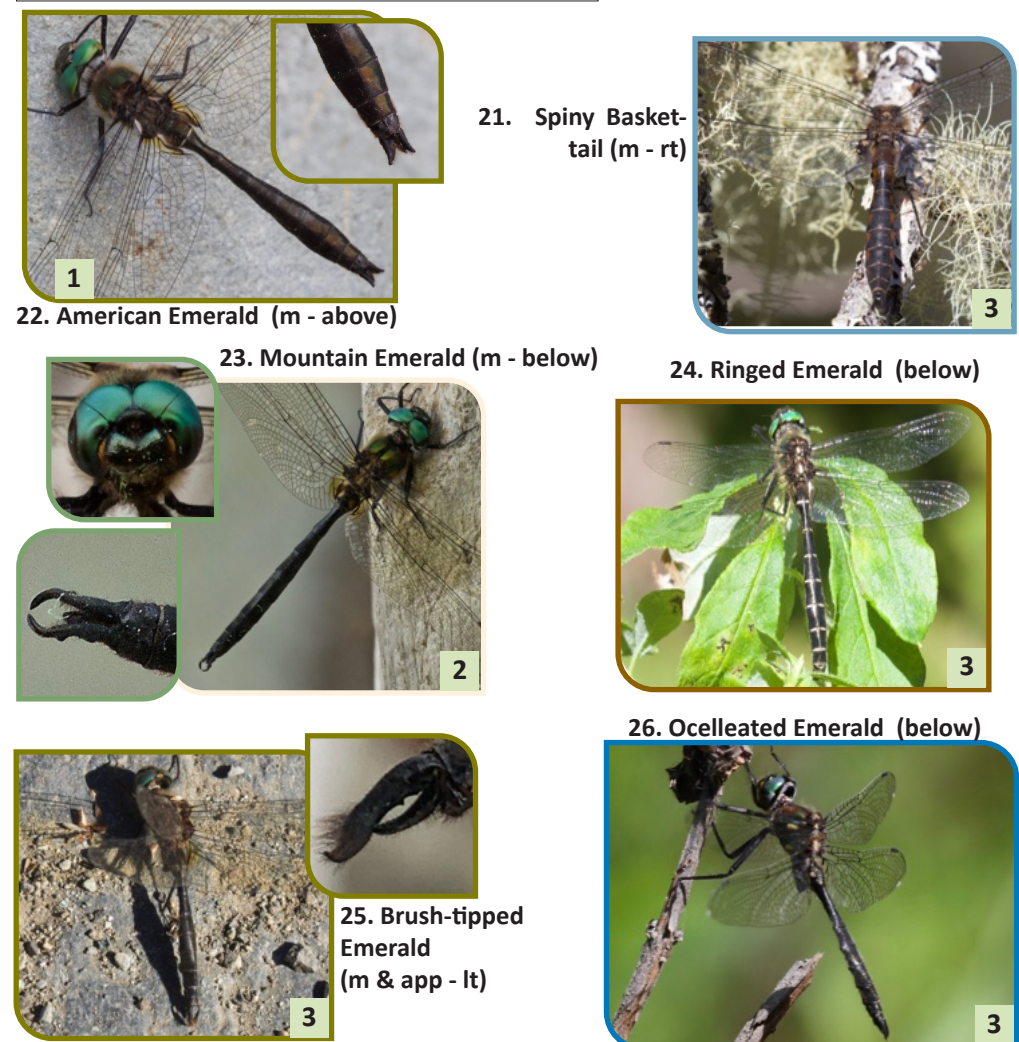
Mosaic Darners (10 - 16) - Large aerialists that usually perch by hanging vertically and have brightly patterned thorax and abdomen. Paired frontal & lateral thoracic stripe shapes/colours are diagnostic when combined with abdominal patterns, types of terminal appendages, presence of spotting under the abdomen, eye colour and wing patterns. Facial line colour, where not black and strong, is an excellent characteristic. Refer to male appendage shape and lateral thoracic stripe photographs below. Lateral stripe photos are oriented with front stripe to the left of photo. For detailed descriptions see overleaf.



Abundance codes: 1: common, easily observed, 21 species; 2: uncommon, work required to observe, 9 species; 3: rare, local, sporadic, difficult access, 15 species.



Emeralds (21-25) bright green eyes and metallic green bodies (appearing black in some light conditions); "fuzzy" appearance to THX.



Odonates of the Sunshine Coast

Rand Rudland

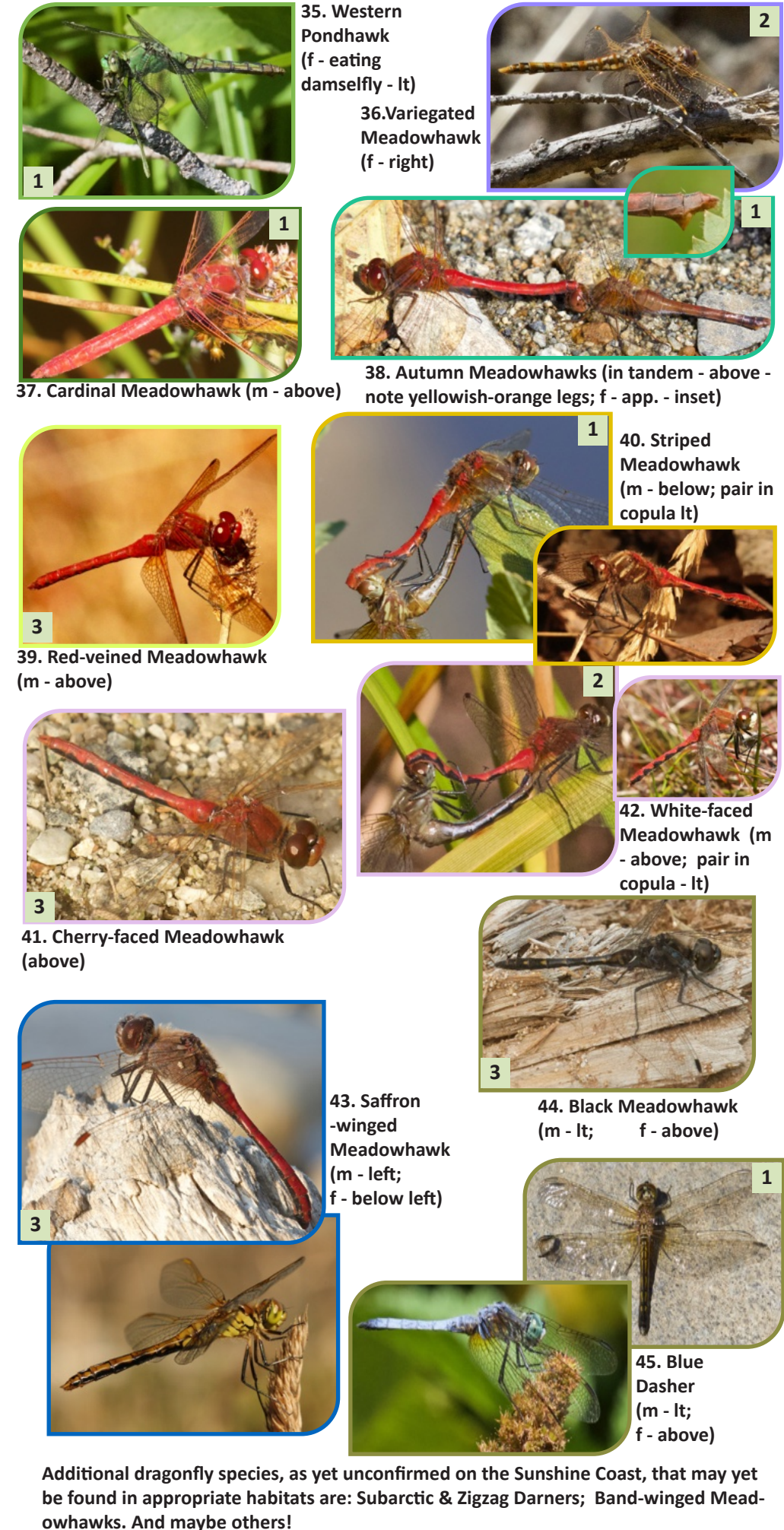
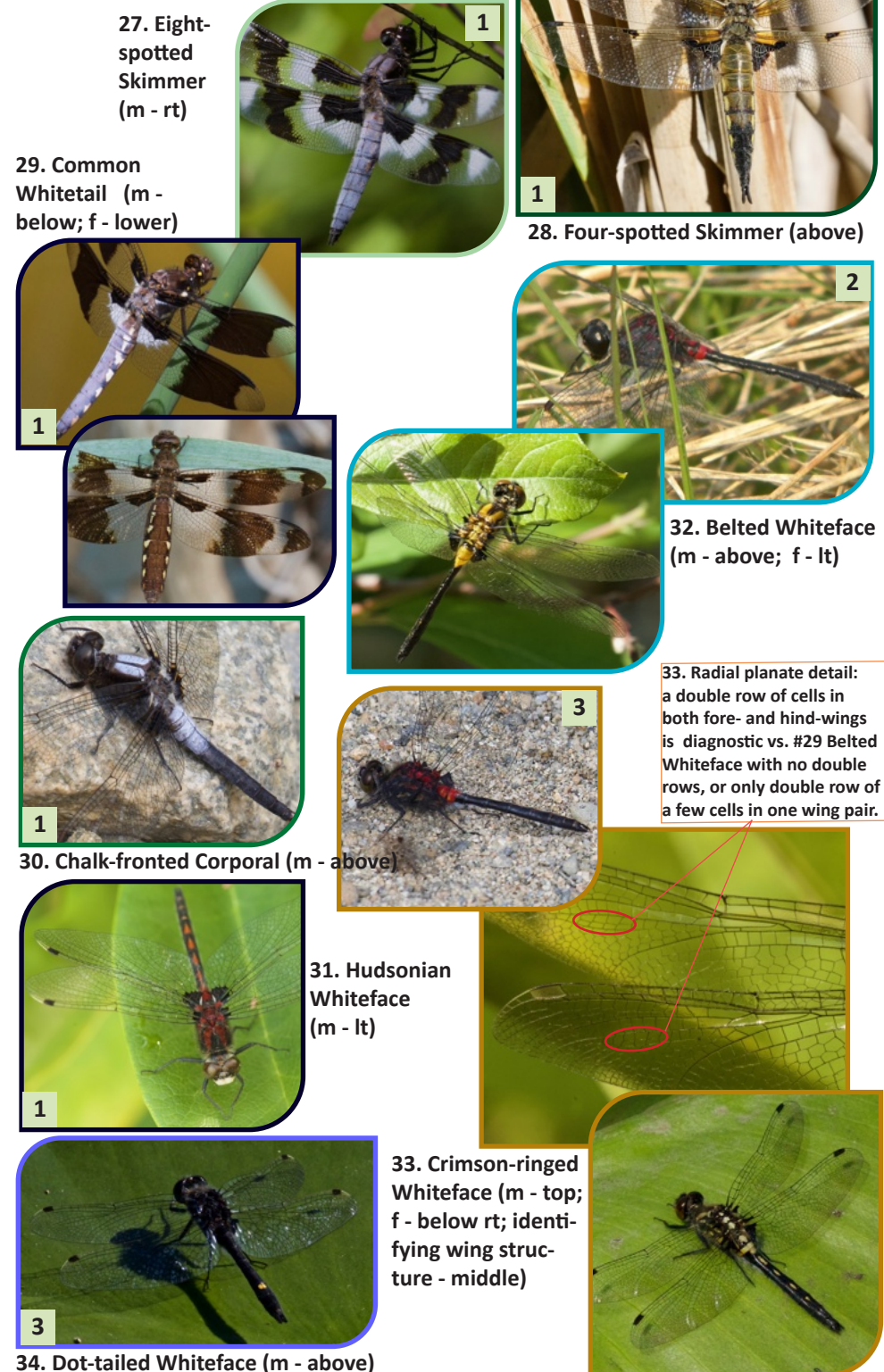
Updated 2022

f = female m = male
lt = left rt = right

See overleaf for full list of abbreviations

Skimmers (24-40) Eyes large, touching in midline. Sexes often dimorphic in body and wing colour patterns. Wide, flat abdomen.

Note: colour of photo borders varies by species



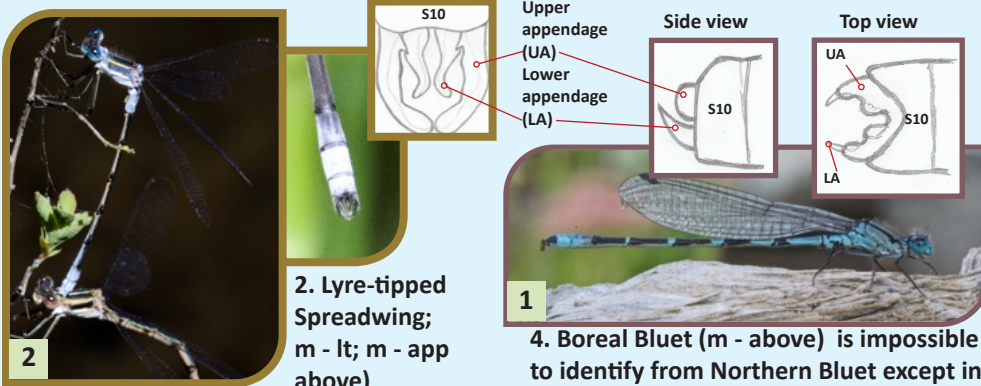
Additional dragonfly species, as yet unconfirmed on the Sunshine Coast, that may yet be found in appropriate habitats are: Subarctic & Zigzag Darners; Band-winged Meadowhawks. And maybe others!

DAMSELFLIES - Suborder Zygoptera

Damselflies are small, weak fliers, with all four wings of similar shape. With the exception of the spreadwings that rest with their wings at around 45º, damsels tend to hold their wings folded over their abdomen at rest. Their eyes are more laterally placed, never touching in the mid-line. Male appendages as in diagrams. Length 26 - 40 mm.



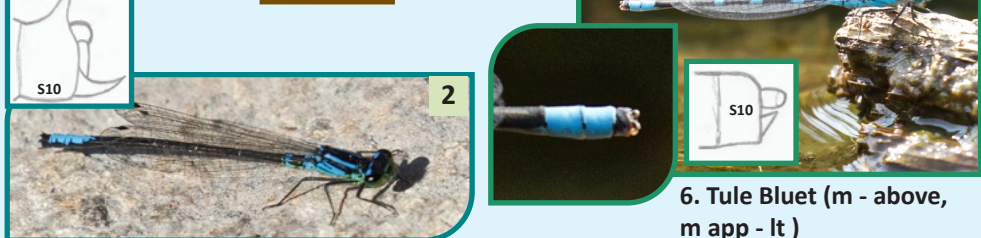
1. Northern Spreadwing (m - above; m - app rt)



2. Lyre-tipped Spreadwing; m - lt; m - app above)



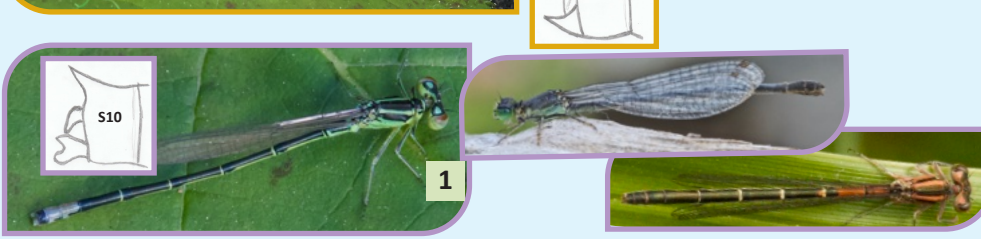
4. Boreal Bluet (m - above) is impossible to identify from Northern Bluet except in-hand by comparing external appendages.



5. Northern Bluets (in copula - lt; f - above; m app - middle)



8. Pacific Forktail (f - below, m - rt)



9. Western Forktail (m - above; f - rt above; f - imm - rt)

Introduction to Odonates - Damselflies and Dragonflies

> Odonates represent an ancient lineage dating back over 300 million years, predating even the dinosaurs. There are over 5500 species worldwide, over 450 in North America, and at least 45 on the Lower Sunshine Coast. Exquisite flyers, they catch insects on the wing, including smaller odonates. > Locally, length ranges from 26 mm (Western Forktail) to 75 mm (Lake Darner, Pacific Spiketail). > Some females lay eggs into water or drop them on dry substrates that will subsequently flood. Those with ovipositors lay eggs into plant tissue, including the twigs of shrubs, reeds and grasses. Some females lay their eggs into the mud of drying ponds, awaiting the next rainfall, or spring. > The majority of an odonate lifespan is spent as an aquatic larva, progressing through 8-15 molts over a 1-6+ year period. Aquatic larval stages are voracious predators, taking all types of prey; tadpoles, small fish, other insect larvae. The fully developed larval stages emerge from their aquatic nursery (photo overleaf) to transform into winged adults, leaving an empty exuvia (photos overleaf) attached to plant stems, rocks, beach sand, tree trunks, even bridge abutments. > Adult lifespan ranges from a few weeks (damselflies) to a few months (large dragonflies). Some dragonfly species are migratory, like the Variegated Meadowhawk and some species forage long distances from the nearest water body. > Remember that odonates are often dimorphic - the sexes do not look alike - and colours may also vary with age. Pale blue-grey progresses to bright blue in some damselflies, yellow-orange may become bright red in some meadowhawks.

1. Northern Spreadwing - M: CE blue, THX dark in front, PRN on sides, narrow blue AHS +/- v. narrow blue MS, ABD metallic dark green above, S1-2 PRN, S8-10 PRN with maturity. F: CE brown or blue, THX wide dark greenish, blue or tan MS & HS. ABD all blackish above.

2. Lyre-tipped Spreadwing - M/F rear of head & all stigma ends pale. M: THX dark metallic brown front, ML & HS narrow blue-green or tan, sides pale blue or PRN, ABD dark green /brown above; S1, sides of S2, part of S8, S9-10 PRN. F: CE brown or blue, THX metallic brown front, narrow ML & AHS, ABD brown to green above.

3. Spotted Spreadwing - M/F: bicolored THX with 2 visible spots low down. M: CE blue, light below, THX brown, black HS wider at rear, ABD metallic brown above, PRN S1-2 & S9-10. F: CE two-tone brown.

4/5. Northern & Boreal Bluets - more blue than black on ABD, POS form large dumbbell. M: CE blue cap on black, THX wide MS, narrow HS, black bar S2, black rings S3-5, most S6-7 black, S8-9 blue, S10 black above. F: brown or blue forms; CE dark brown over light brown. See APPs diagram.

6. Tule Bluet - POS form narrow dumbbell. M: CE blue /black cap, MS broad, HS narrow, AHS wider than HS. ABD large black AS S2, more black than blue S3-7, S8-9 all blue, S10 black over blue. F: blue or brown, CE brown over tan; THX as male; ABD little to no blue; black stripe top of S8.

7. Swift Forktail - M: large, blue. CE black over green; dark face, POS large blue; THX blue, MS & HS black, black lines on sides. ABD black; S1, tip S2, most S7, all S8-9 blue. F: as M, or THX orange, progresses to green with age; black MS & HS; ABD all black.

8. Pacific Forktail - the only M & blue F with 4 pale spots on top of a black THX. M: CE black over green; THX blue sides; ABD black, S8-9 blue/partial black stripe low on sides. F: CE black over greenish; orange variety with ABD pinkish-orange S1-2, blue S8-9, orange legs, later become black.

9. Western Forktail - M: CE black over green; face bright green; POS blue-green. THX bright green & black. ABD black except S1-3 sides green, S8-9 blue/short/thick black side stripes. F: CE brown over greenish-tan; IMM orange AHS/HS and ABD base of black ABD; POS large orange. PRN ++ as age.

10. Lake Darner - large; LTS notched, extended, pale spot between; ABD much blue (M), blue or green (F) no spots under ABD. CE turquoise above; FL black; LTS blue or blue to green below; FS greenish; M: APP simple. F: colorations blue as M, or blue features replaced by green.

11. Shadow Darner - LTS straight, narrow +/- posterior flags top end; FS narrow; ABD spots small, pale spots under ABD; M: CE turquoise. LTS blue-green to yellow-green below; APP paddle-shape. F: CE brown and yellow markings - or - CE blue-tinged and LTS green-yellow; CI rounded, longer than S9-10.

12. Black-tipped Darner - dark with limited blue. LTS straight, narrow +/- posterior flags top end; FS v. narrow, greenish; dorsal ABD spots small, none on all-black S10, with no spots underside ABD; M: CE turquoise. LTS blue, or blue to green below; APP simple. F: colored as male or rarely yellow-green ABD spots; CI pointed, much longer than S9-10.

13. Sedge Darner - LTS wide, straight +/- flag top end, long streak between, +/- short streak in front. FS strong; FL fine black; ABD mid segments usually have light spots under. M: CE bright green. LTS blue/yellow-green below. ABD spots small, present on S10; APP simple. F: CE greenish; ABD & THX with yellow-green markings - or - all blue.

14. Paddle-tailed Darner - LTS straight, occ. flagged, pale spot between. FS narrow. FL fine black. M: CE turquoise/blue. LTS blue to greenish-yellow. ABD large blue spots. APP paddle. F: colored as M, or brown CE & yellow markings. CI obtuse angle to tip, +/- as long as S9-10.

15. Canada Darner - LTS notched, extended, yellow spot between. FS obvious, pale blue or gray spots under most ABD segments. M: LTS blue, FS greenish, ABD spots moderate sized, blue. F: yellow-tinged CE & yellow-green markings - or - blue-tinged brown CE & blue markings; FS +/-

16. Variable Darner - LTS narrow/straight, or divided-upper & lower parts. FS +/- absent. FL fine black. M: CE dark blue, face pale greenish. LTS mostly blue. ABD blue ++, S3 looks all blue from sides with narrow black dorsal line. S10 spots white/pale blue. APP simple. F: blue or brown/yellow

17. Blue-eyed Darner - LTS straight/narrow; FS narrow/absent; M: face & CE sky-blue, LTS pale blue. F: CE brown; yellow markings -or- CE yellow-blue-green/blue-tinged face; LTS/ABD spots blue.



ID Characteristics & Abbreviations	Facial Line (FL)
Abdomen (ABD)	Frontal Stripe (FS)
Adult (AD)	Humeral Stripe (HS)
Antehumeral Stripe (AHS)	Immature (IMM)
Apical Spots (AS)	Lateral Thoracic Stripes (LTS)
Appendages - male (APP)	Median Line (ML)
Appendages - female cerci (CI)	Median Stripe (MS)

18. California Darner - small; LTS straight/strong black border behind, FS absent. M: CE bright blue, face whitish above, front bluish; APP simple. F: CE light brown; stripes yellow-or-CE blue; blue stripes & spots.

19. Common Green Darner - only SC species with THX green, ABD blue (M)-or-(reddish)-brown (F); black line on ABD top. M: CE dull green/paler below. Frons blue above - "bulls-eye" pattern.

20. Pacific Spiketail - large; black, with yellow spots & stripes, CE dark blue above, paler below (M/F)

21. Spiny Baskettail - slender, dark body, clear wings with small dark markings at base of hindwing; M: CE emerald green. Face dull yellow-orange with black on top of frons with broad-based T-spot. THX brown, darker markings, small yellow spots low on sides; ABD S1-2 brown, rest black with long yellow spots S3-8. F: as M, CE duller; AD drk-grn & brown

22. American Emerald - no markings; dark, small ABD clubbed. M: CE bright green, face dull-brown. ABD shiny black with metallic green stripes between segments; S1-2 mostly orange-brown on sides. F: colored as male, ABD thicker, wings turn brownish with age.

23. Mountain Emerald - THX - faint spots; M: CE bright green, face mostly blackish/yellow sides. FL striped. THX metallic green, LTS pair of spots, diminish with age. ABD black, faint yellow markings S1-2. APP pincer-like. F: colored as M but S3 +/- dorso-lateral spots, +/- tiny basal spots S6-7.

24. Ringed Emerald - only SC emerald with distinct complete white rings between abdominal segments. M: face black with yellowish sides. THX pale yellow short vertical line on green-black sides. ABD overall black. F: colored as M - THX brown mixed with green. SGP short, half of height of S9.

25. Brush-tipped Emerald - small; prominently clubbed ABD with distinct bushy appendages. M - THX brown and metallic green, prominent yellow spots on sides, front one longer/narrower than rear one. ABD black, S5-7 with small pale half-rings or basal spots. F: colored as M except larger pale half-rings or basal spots S5-7. SGP scoop-shaped with rounded tip, +/- as long as height of S9.

26. Ocellated Emerald - THX small; distinct light spots on sides. M: Face - metallic green, sides dull yellow-brown; THX - brown/metallic green, 2 oval pale yellow spots each side; ABD black with conspicuous yellow spots side S2, base S3. F: coloured as M; SGP at right angles to ABD, pointed, not as long as height of S9.

27. Eight-spotted Skimmer - 2 large dark spots on all wings; CE dark brown; face brown. M: THX dark brown, pair of yellow spots low on sides; ABD prunose; 2 white patches/wing with age. F: ABD dark brown/black, elongate yellow spots laterally to S8. +/- develop white patches in wings as do M.

28. Four-spotted Skimmer - M/F similar. Small spots on middle of wings leading edge, black spot hindwing base, small dark nodus; forewings +/- yellow/orange front edge. CE brown over green, face tan; THX brown with yellow below, black suture lines. ABD brown to orange-brown.

29. Common Whitetail - CE brown. M: ABD as F, becomes PRN pale blue to white as adult. Wings black streak at base all wings, hind wing develops light patch at base at maturity, wide black cross-band mid-wing. F: THX brown, 2 white LTS; ABD brown, line of black-outlined light spots along sides. All wings with 3 dark spots, 2 across entire wing width, 1 narrower at base.

30. Chalk-fronted Corporal - dark marks at base of all wings, otherwise clear except nodus. ABD black with pale base. M: CE dark brown; black face. THX dark with "corporal" stripes on front. F - CE brown; face tan. THX brown, pale front; ABD brown with black keel, dorsal midline dark stripe.

31. Hudsonian Whiteface - (Note: all Whitefaces have white faces!) CE dark brown. ABD prominently spotted in midline S4-7 - red (M/F) or yellow (F). M: THX red, black triangle on front, ++black side markings ABD black, most of S1-2 red, S3 base red. F: like M or red replaced with ochre (THX), yellow (ABD)

32. Belted Whiteface - CE dark brown. THX bright red/black (M/F) or yellow/black (F). M/F ABD black except base (S1-3) red (M/F) or yellow (F). M: +/- narrow red spots dorsal midline. Radial planate diagnostic (see photo #30). F: best identified in-hand under magnification of genital plates.

33. Crimson-ringed Whiteface - M/F similar to #29 except double row of cells in radial planate all wings. F: subgenital plates different than #29 - barely visible.

34. Dot-tailed Whiteface - M-F readily identifiable-yellow dot dorsal ABD. CE brown. THX dk-brown.

35. Western Pondhawk - blue (M) or green (F) overall, incl. face. M: CE turquoise-blue. ABD becomes PRN before THX; fine black lines all segment borders and dorsal midline ABD. APP black. F: CE +/- turquoise as mature. M/F tenerals (newly hatched) bright lime green.

36. Variegated Meadowhawk - large. Complex ABD patterns. Legs black & yellow striped. Stigma darker in centre than ends; THX brown with paired wide white LTS (F & IMM-F) or yellow spots (M/F). M: CE red over pinkish to gray; face red front, brownish sides. ABD brown/red complex pattern. Legs black with brown stripe outside. F: CE & face brownish-tan. (See Paulson, p. 457)

37. Cardinal Meadowhawk - overall bright scarlet. M: CE red over tan; face red-orange over tan-orange; THX - 2 pale yellow spots low down. Wings - reddish anterior & basal veins, dark brown basal streaks all wings - larger in hindwings. F: same as male - body brown or reddish.

38. Autumn Meadowhawk - M: all red except narrow black median spot S9. Only SC meadowhawk with legs reddish-brown (M/F). F: CE reddish over tan. THX /ABD - tan or red. Black spot S9 +/- S8.

39. Red-veined Meadowhawk - large; strong LTS, red-veined wings. M: CE & face red. THX red, faint black suture lines, trace of two black spots low on sides. ABD red, +/- black specks on posterior segments. Legs black. Wing veins on front & base reddish +/- orange suffusion to basal wing membranes. F: CE red-brown over pale green. Face tan. THX brown - 2 broad, white LTS +/- faint FS. ABD tan with thin black lateral stripe S4-9/whitish area below; narrow black median line S8-9.

40. Striped Meadowhawk - red overall, face tan, 2 strong LTS, 2 weaker FS. M: CE red-brown over tan. ABD red with black ventrolateral "sawtooth" markings S4-8. Legs black (coastal forms). F: THX similar bright to male, ABD tan with similar black markings. Wings +/- orange tinged base, front wing- edges. LTS +/- present as age.

41. Cherry-faced Meadowhawk - black legs. M: CE red, to green below; face reddish. THX & ABD red with black ventrolateral triangles markings S4-9, more rectangular near rear; +/- median red line S7-8. Wing-base veins +/- yellow-orange F: Eyes red-brown over tan; face tan; THX & ABD tan; continuous black ventro-lateral stripe S4-9, narrower on S2-3. Wings +/- orange tinged base, front wing edges. LTS +/- present as age.

42. White-faced Meadowhawk - snow white face, black legs, and black "sawtooth" ABD markings. M: CE red-brown over pale green/gray. THX brown +/- pale spots lower sides. ABD red with black marks S4-8, lower surface S9 black. APP reddish. F: CE as M, face pale yellow. THX brown front, lighter sides with pale areas below. Wings +/- orange tinge at base.

43. Saffron-winged Meadowhawk - M: generally dark red overall. CE dark red, paler below; face reddish-tan. THX red-brown/black suture lines. ABD red, duller base, black lateral lines S3-9 (usually), narrow black ML S8-9. Anterior wing veins reddish, stigma red, bordered by heavy black lines. F: CE reddish over tan; face tan. Much reduced black ABD markings compared to M. Anterior wing veins yellow to orange, stigma clear yellow, bordered as M. Some become red as M.

44. Black Meadowhawk - M: black to dark brown from face to APP including legs and costa; face turns metallic; younger individuals appear as females, slowly turning dark but retain patterning for some time. F: CE red-brown over pale green, face tan; THX brown in front, sides pale yellow with complex black stripe pattern with small pale spots contained in black. ABD yellow base, tan with long black stripe S2-9/10; black median stripe S8-9; costa yellow.

45. Blue Dasher - face white, blue at top. M: CE green. THX dark brown with narrow brown FS, dark brown/yellow side stripes, all becoming PRN with age. ABD PRN blue when mature. F: CE red over gray, turning green later; THX as M, ABD longitudinal stripes yellow to green - or - brown to black.

Thanks to Rob Cannings, Ph.D., for his support on the subject of dragonflies. All photos ©Rand Rudland except #26 ©Arnold Skei. Identification details and diagrams modified after Rob Cannings, "Introducing the Dragonflies of BC and the Yukon", RBCM; and "Dragonflies and Damselflies of the West", Dennis Paulson, Princeton Field Guides. All photos taken within the Sunshine Coast Regional District except #34. Current status on the SC at iNaturalist - "Dragonflies and Damselflies of the Sunshine Coast, BC, Canada"

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