

Suggested study aids for the USFWS Quino checkerspot butterfly practical exam:

✧ Visit a museum and study pinned butterfly specimens.

✧ References:

1) Mattoni - Butterflies of Greater LA

4) Brown & Faulkner - Butterflies of Baja Calif.

2) Emmel & Emmel - Butterflies of So. Cal.

5) James A. Scott - Butterflies of N. America

3) Garth & Tilden - Butterflies of Calif.

✧ Keep in mind that the test:

1) is timed

3) includes identifying 10 mounted specimens

2) includes 20 video clips of co-occurring butterfly species

4) includes 3 larval photos

The test rules:

1) All butterflies on the test co-occur with Quino in its current range.

2) Any species can appear more than once anywhere on the test.

3) The testee does not need to distinguish between *E. chalcadon chalcadon* and *E. chalcadon hennei* (i.e., only identify to species).

4) The testee can miss up to 4 answers on the video portion, and 2 on the mounted portion, but they cannot misidentify Quino (i.e., they cannot identify Quino as another species and they cannot identify another species as Quino, this is an automatic failure).

5) The testee has 30 seconds per box on mounted specimens, 20 seconds per clip on video portion, with 20 seconds between clips. The video cannot be paused or stopped in progress.

6) The testee can pick up boxes with mounted specimens in them, but the boxes should not be opened. The specimens should be mounted at an angle to allow the testee to see the ventral side. (The boxes should remain covered when not being viewed).

7) Responses on the answer sheet may be common name or scientific name (names published in recent literature (\geq 1980's)).

8) An individual may take the test only twice prior to any given butterfly season. If they fail the test twice, they must then wait until the end of that species flight season before they can then come back in for another attempt at the test.

Potential test specimens are limited to the following:

Adults:

Acmon blue (*Icaricia acmon*)

Sonoran blue (*Philotas sonorensis*)

southern blue (aka silvery blue) (*Glaucopsyche lygdamus*)

Edward's blue (aka Ceraunus blue) (*Hemiargus ceraunus*)

marine blue (*Leptotes marina*)

brown elfin (*Incisalia augustinus*)

great purple hairstreak (*Atlides halesus*)

Sara's orange tip (*Anthocharis sara*)

buckeye (*Precis coenia*)

Lorquin's admiral (*Limenitis lorquini*)

red admiral (*Vanessa atalanta rubria*)

California sister (*Adelpha bredowii*)

perplexing (green) hairstreak (*Callophrys perplexa*)

west coast lady (*Vanessa annabella*)

Virginia (American) lady (*Vanessa virginiensis*)

Painted lady (*Vanessa cardui*)

Quino checkerspot (*Euphydryas editha quino*)

chalcadon checkerspot (*Euphydryas chalcadon chalcadon*)

Henne's checkerspot (*Euphydryas chalcadon hennei*)

Wright's (Leanira) checkerspot (*Thessalia leanira wrightii*)

Gabb's checkerspot (*Chlosyne gabbii*)

Mylitta crescent (*Phyciodes mylitta*)

California patch (*Chlosyne californica*)

Behr's metalmark (*Apodemia mormo virgulti*)

checkered skipper (*Pyrgus communis*)

anise swallowtail (*Papilio zelicaon*)

pale swallowtail (*Papilio eurymedon*)

western swallowtail (*Papilio rutulus*)

California white (*Pontia sisymbrii*)

European cabbage butterfly (*Pieris rapae*)

common white (*Pontia protodice*)

California ringlet (*Coenonympha tullia californica*)

monarch (*Danaus plexippus*)

satyr anglewing (*Polygonia satyrus*)

California tortoiseshell (*Nymphalis californica*)

striated queen (*Danaus gilippus strigosus*)

Wright's metalmark (*Calephelis wrightii*)

Larvae: Quino, buckeye, and chalcadon checkerspot.