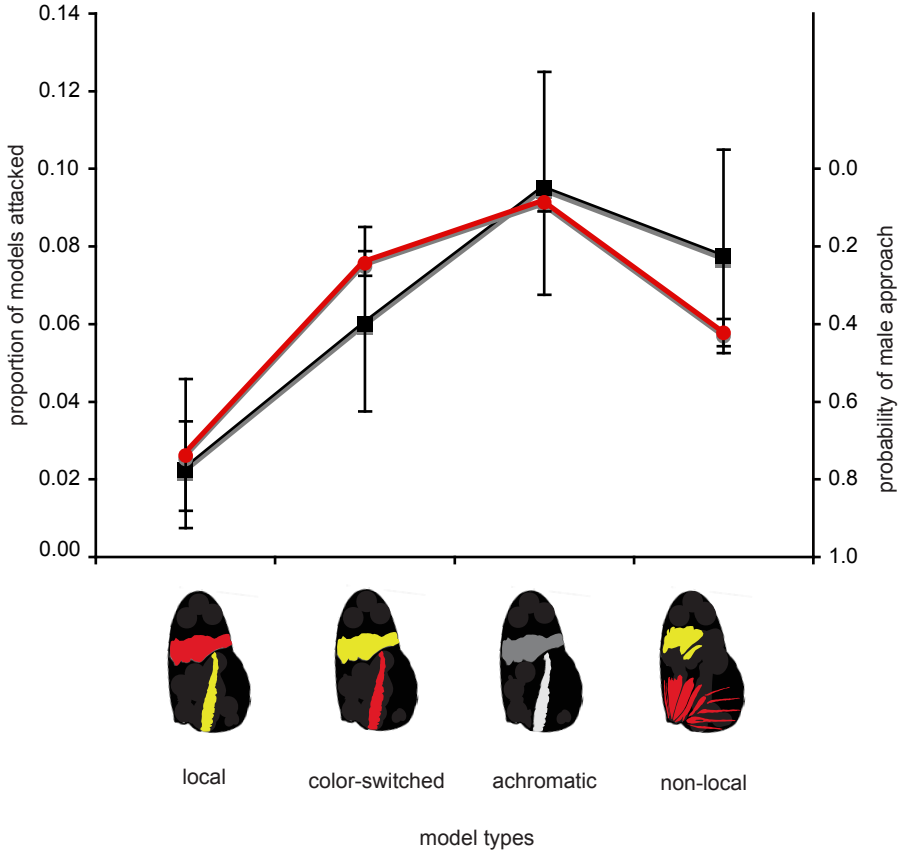


Fig. S1. Color- and pattern-manipulated butterfly models experience different predation rates (left axis) and different probabilities of inducing premating approach behavior in male butterflies (right axis).
There are four model types: a local *H. erato* type, a color-switched type, an achromatic type, and a nonlocal type. Predation data include 95% c.i. (total n = 1600: 400 of each model type, 100 sites) and mate preference data include 95% credible intervals (n = 51 butterflies). Asterisks represent the p-values from pairwise comparisons (zero-inflated Poisson regression model with a two-tailed estimate) between predation on the local model type and the three other model types where *P<0.05, **P<0.005, ***P<0.0001. All approach probability comparisons (hierarchical random effects Bayesian model) show that the preference means differ significantly between the model types, where all Bayes factors >1.0 x 10_4 (Reprinted with permission from Finkbeiner et al., 2014).

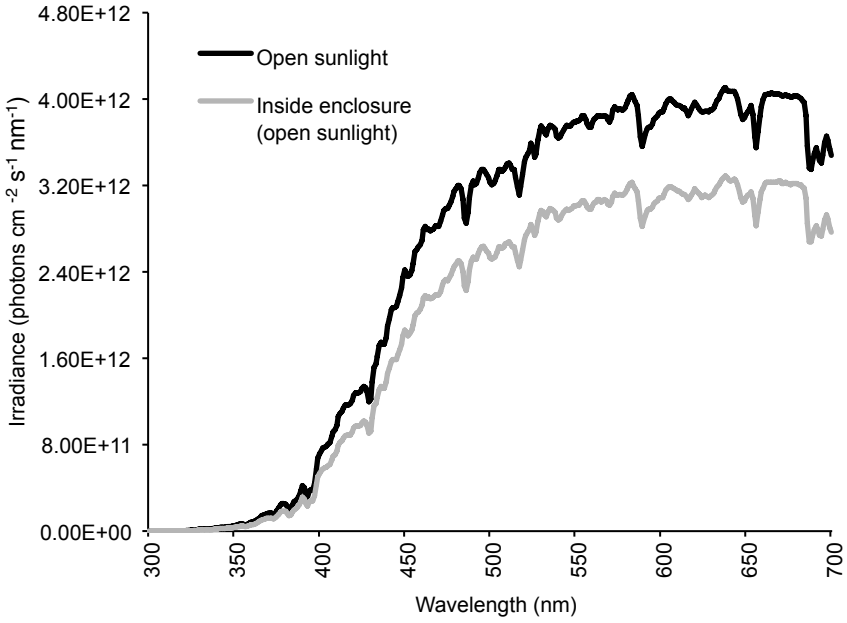
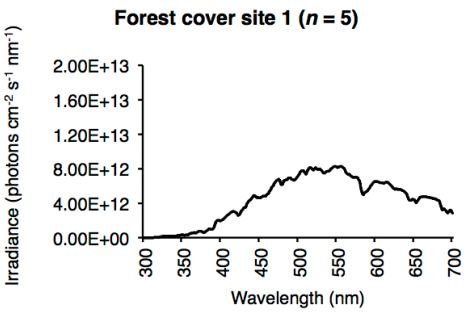


Fig. S2. Irradiance spectra of open sunlight and the experimental cage during open sunlight conditions. Each graph represents the average from five measurements in each condition.

A



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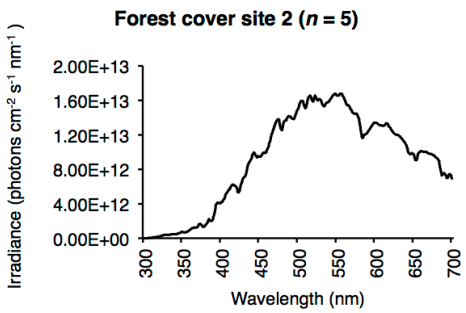

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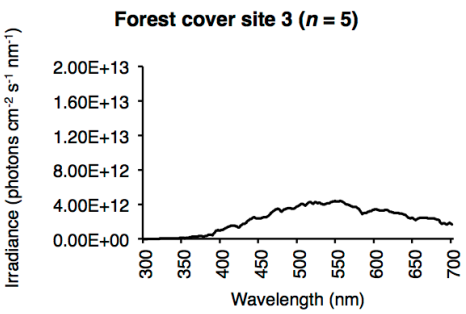

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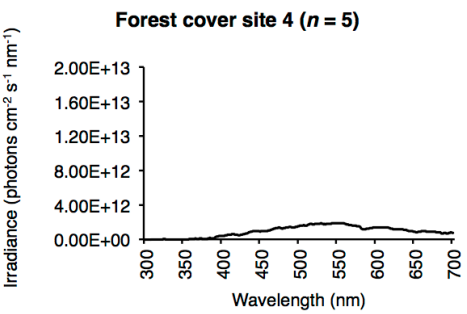

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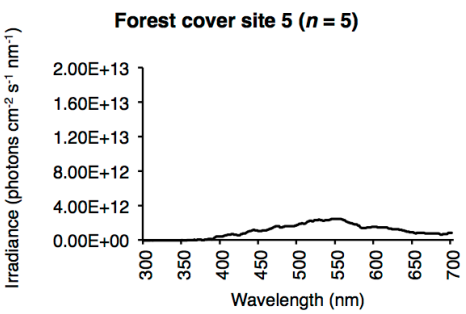

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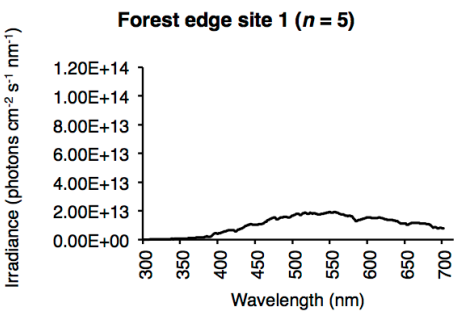

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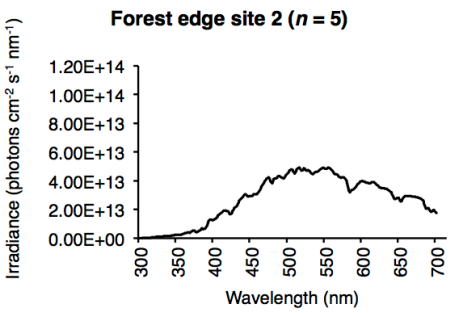

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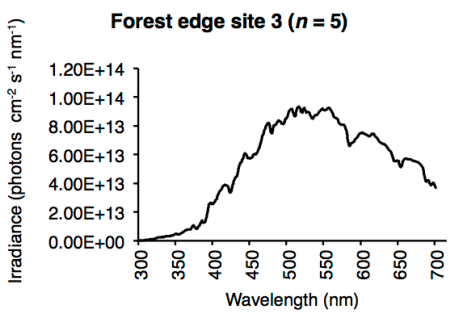

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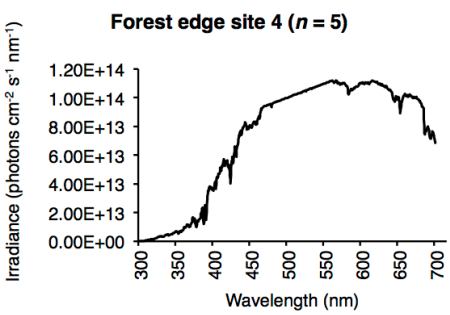

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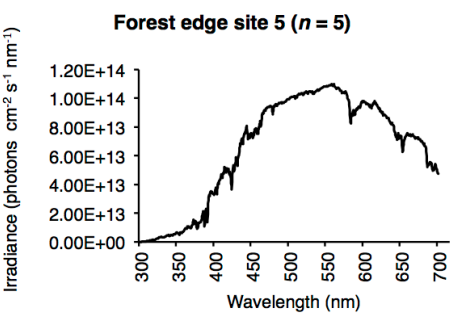

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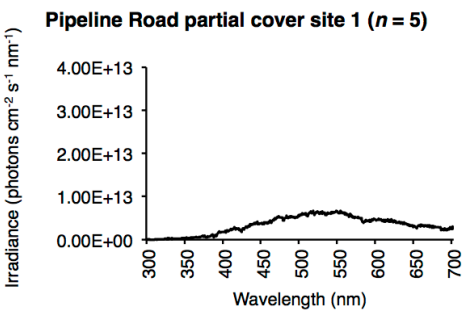

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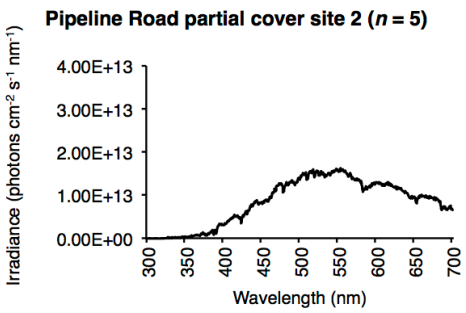

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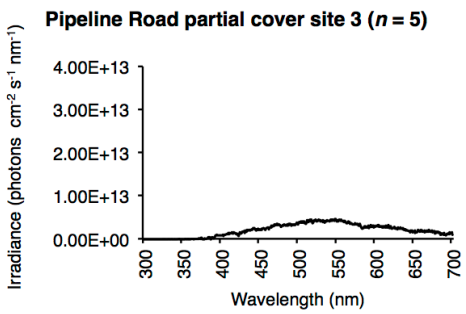

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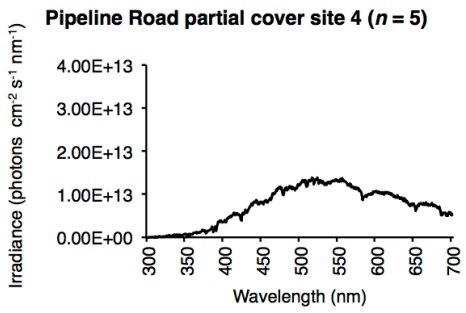

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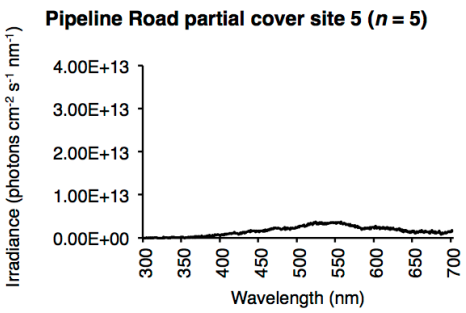

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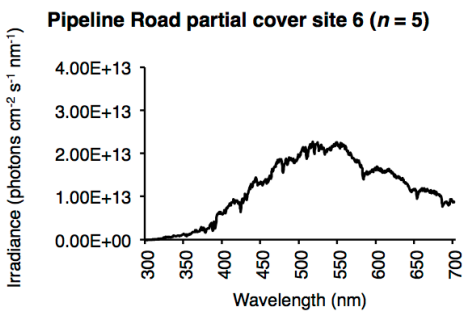

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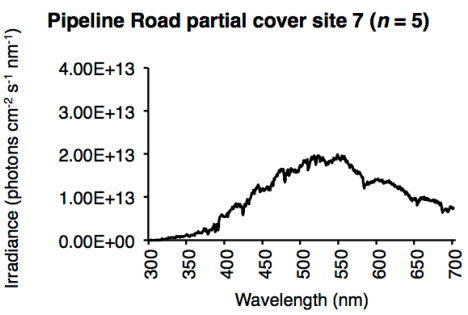

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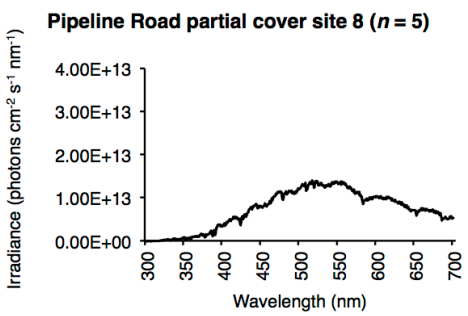

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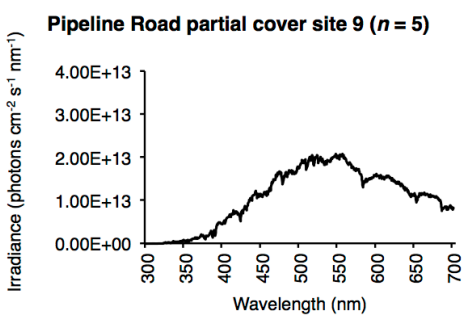

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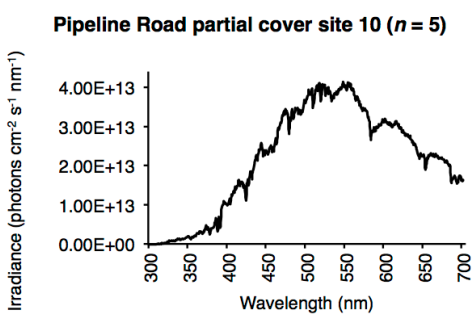

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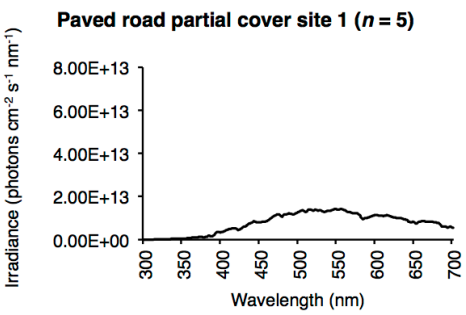

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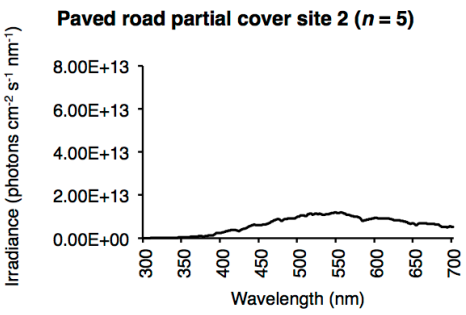

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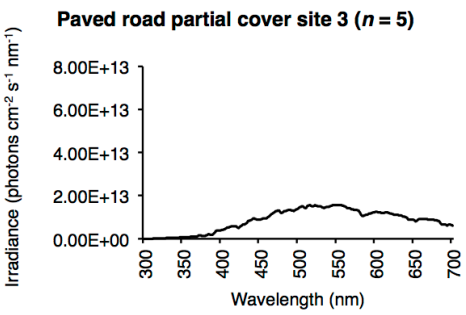

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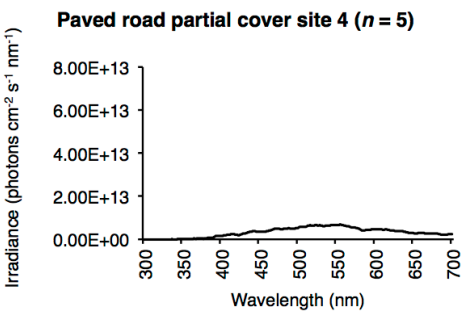

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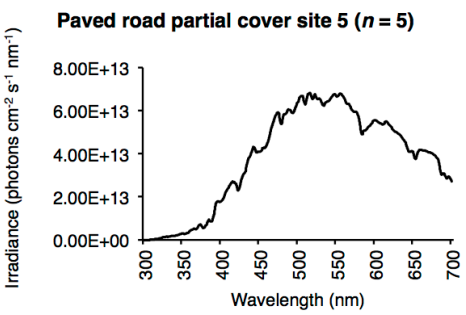
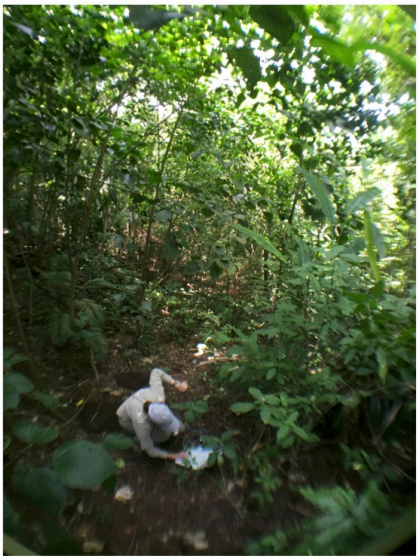


Fig. S3. Habitat types.

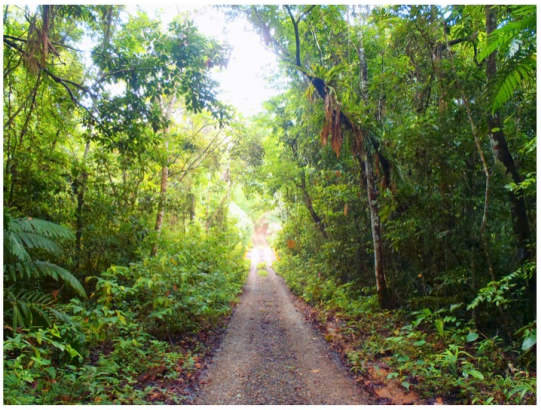
Irradiance spectra with photos of corresponding foliage cover, taken from the four major habitat types used in the predation study: forest cover (A-E); forest edge (F-J); Pipeline Road (unpaved road with partial forest cover), (K-T); and paved road with partial forest fover (U-Y). Five different sites were measured (repeated five times) for forest cover, forest edge, and paved road, whereas ten different sites were measured (repeated five times) for Pipeline Road because this was the dominant habitat type used in the study.

Examples of four habitat types:



Forest cover

Forest edge



Pipeline Road

Paved road

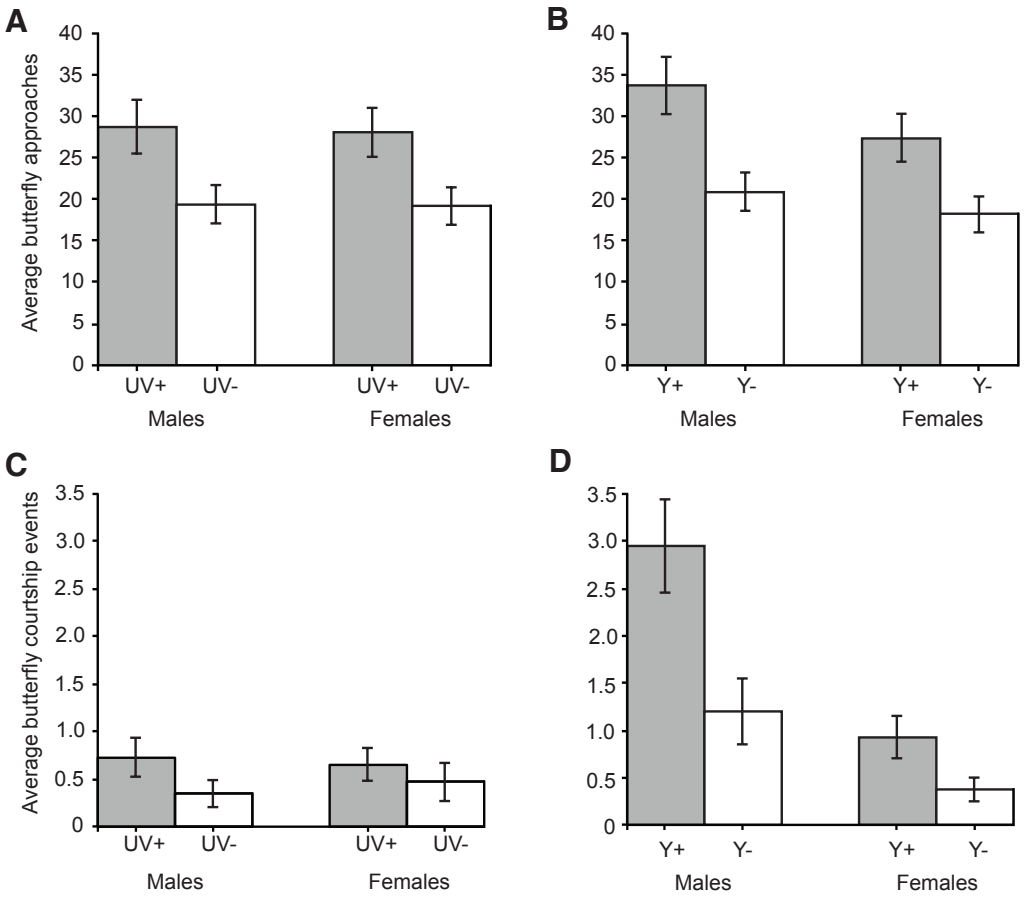


Fig. S4. Male and female *H. erato* approach and courtship behavior.
Male and female *H. erato* butterflies approach and court UV- and Y- manipulated artificial butterfly models at varying rates (A-D). All behaviors directed toward UV models are in the left column, and behaviors directed toward Y models are in the right column. Shown are the mean±s.e.m. approach and courtship values (n = 80 butterflies: 40 males and 40 females for each experimental model pair). No separate statistical tests were performed for these data.

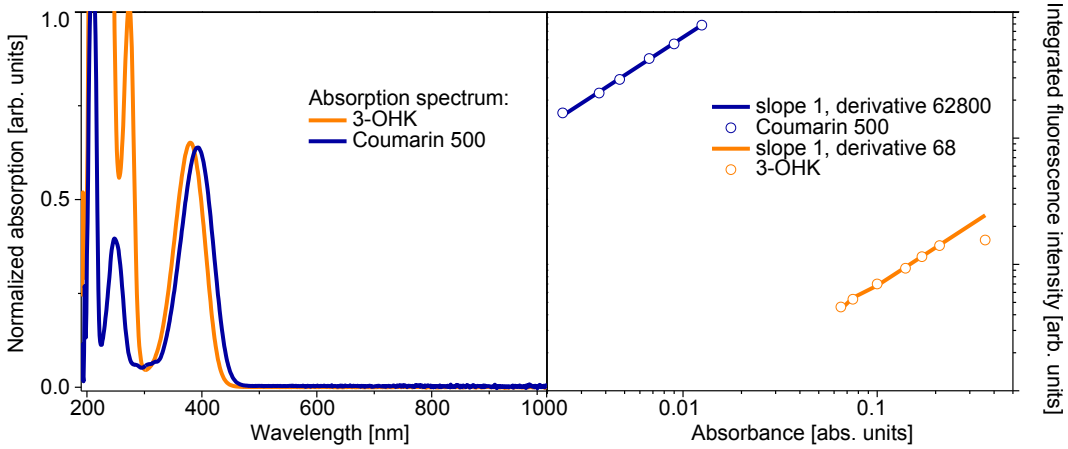
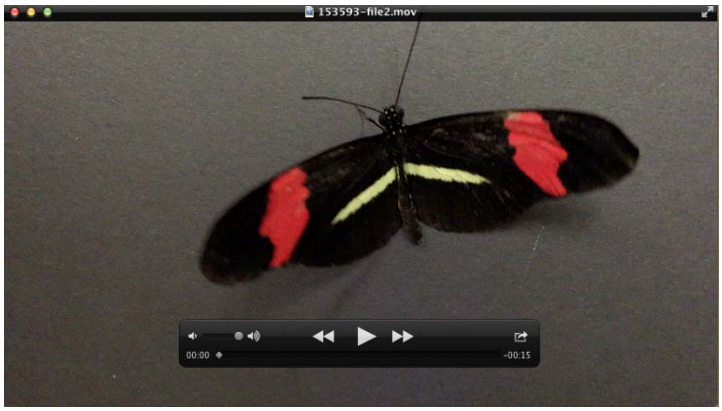


Fig. S5. Experimental data used to determine the quantum yield of 3-OHK in methanol.
(A) Absorption spectrum of 3-OHK pigment and Coumarin 500. Both dye and pigment have a very similar absorption spectrum making Coumarin 500 a good choice as a reference in quantum yield measurements. (B) Quantum yield determination using Coumarin 500 dye (blue curve) and 3-OHK pigment (orange curve). Coumarin 500 quantum yield is 0.46.



Movie S1: Example of fluorescing 3-OHK pigment on a *H. erato* butterfly under a hand-held 365 nm LED light.

Movie S2: A female *H. erato* butterfly directs approaches toward a Y+ model (right side).

Movie S3: A female *H. erato* butterfly directs approaches toward a UV+ model (left side).