| Order | Max Surveyed Height (m) | Vision, Light & Color | Heat | Wind | Flight & Migration | Sound & Vibration | Other |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Shape  Description automatically generated with medium confidenceLepidoptera | Moths: 450Butterflies: 1250 | PhototacticMay have preference for shorter light wavelengths (395, 418 nm) | Thermoregulate via basking | Some species utilize high winds for migrationMay be able to use wind direction to orient flight | Several species migrate at high altitude over very long distancesForm migrating swarmsLocate mates via hilltoppingSynchronous flight muscles | Use airborne acoustic signals to detect and avoid predatorsAnthropogenic noise may cause stress in larvae | Found in stomach of bats killed via turbine |
| Shape  Description automatically generated with low confidenceHymenoptera | >550 | Likely not attracted to red obstruction lighting.Attraction to the color white.Attraction to UV light | Bees may choose to forage on warmer inflorescenceCapable of warming via shivering | Some species capable of flying in high wind speeds | Asynchronous flight musclesHoneybees form swarms to locate new nest sitesLocate makes via hilltopping | Honeybees use vibration to communicateParasitoids may use vibrations to detect hosts | Found in stomach of bats killed via turbine |
| Shape  Description automatically generated with medium confidenceOdonata | Dragonflies: 272Damselflies: 57 | May prefer habitats with less shadeHigh visual acuitySensitive to polarized lightColoration of individuals may influence competitionUse vision for hunting | Thermoregulate via basking | Some species use high winds for migrationForage and interact in lower wind speeds | 18 NA species considered migratory. Most migrate at altitudes <100m *Pantala flavescenes* migrates at high altitudes Synchronous flight musclesLocate mates via hilltopping | - | - |
| Shape  Description automatically generated with medium confidenceHemiptera | Leafhoppers: 922Stink Bugs: 922 | May be attracted to yellow and redUse vision for predator avoidanceMay be attracted to white lightPhototactic | Triatomine bugs can perceive infrared radiation, among the most heat sensitive insects.Leafhoppers showed attraction to solar heat-based trapsThermoregulate via basking | Use wind for dispersalModify flight direction based on windCan cling to metal surfaces in high winds | Asynchronous flight musclesSome species migrate | Use airborne acoustic signalsSubstrate-borne noise may affect signalingMay be more abundant in high-noise areas | Found in stomach of bats killed via turbine |
| Shape  Description automatically generated with medium confidenceDiptera | 507 | Showed significant attraction to white turbine mimicsPhototactic | Tabanids show strong attraction to heatThermoregulate via baskingHematophagous species may be particularly heat sensitive | Use wind to disperseWind speed may affect oviposition sites | Asynchronous flight musclesForm evening mating swarmsLocate mates via hilltoppingNoise may inhibit host-location | Use airborne acoustic signalsNoise may mask mating calls | Found in stomach of bats killed via turbineSome species found basking on turbine towers |
| Shape  Description automatically generated with low confidenceOrthoptera | >400 | May prefer 540-570 nm wavelengths and vertical stripesMay be attracted to yellow | Thermoregulate via baskingFly in warm temperatures | Use wind to disperse | Synchronous flight musclesMany species form large swarms | Use airborne acoustic signalsExposure to anthropogenic noise may hinder mate location, delay maturity, and reduce lifespanModify calls | Found in stomach of bats killed via turbine |
| Shape  Description automatically generated with low confidenceColeoptera | Ladybird: 1100 | PhototacticMay prefer shorter light wavelengths (395, 418 nm) and UV light | Some species may rely on floral heat rewards to reduce mating energy costsThermoregulate via baskingSome species have infrared sense organs  | Wind may affect dispersal and oviposition sitesUse wind to orient to olfactory stimuli | Some species migrate at high altitudesAsynchronous flight musclesLocate mates via hilltopping | Can influence reproductive success and brood sizeUse airborne acoustic signalsMay be more abundant in high-noise areas | Found in stomach of bats killed via turbineSome species found overwintering on turbine towers |
| Shape  Description automatically generated with medium confidenceNeuroptera | >550 | May have preference for cool, white light (440, 580nm) | Heat stress harmful to larvae | May respond differently to wind depending on habitat | Synchronous flight muscles | Use airborne acoustic signalsUse substrate-borne vibrations to locate prey | Found in stomach of bats killed via turbine |
| Shape  Description automatically generated with medium confidenceTrichoptera | 300 | Low upper thermal toleranceMay have greater attraction to artificial light near water | Some have seasonal changes in upper thermal limits | May use wind to disperse | May fly at forest canopy level to disperse | May be more abundant with increased low-frequency noise | Found in stomach of bats killed via turbine |
|  |  |  |  |  |  |  |  |
| Ephemeroptera | 300 | May have greater attraction to artificial light near water | Some have seasonal changes in upper thermal limits | May use wind to disperse | Form large mating swarms | - | Found in stomach of bats killed via turbine |
| Shape  Description automatically generated with medium confidenceThysanoptera | >550 | Evidence for and against attraction to artificial lightMay show avoidance to red lightPhototacticMay prefer areas with high UV light | Some can adapt to cold and hot conditions | Likely dispersed by wind | Asynchronous flight musclesMay form swarms | - | - |
| Shape  Description automatically generated with low confidencePsocodea | >550 | Attraction to UV and green wavelengths | Hematophagous species may be particularly heat sensitive | - | Wings often absent or reduced | - | Found in stomach of bats killed via turbine |

**Families of note: Noctuidae (Lepidoptera), Nymphalidae (Lepiodptera), Alydidae (Hempitera), Coccinellidae (Coleoptera)**

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