

## Guidelines and Protocols for PEFA Observations and Summaries Spreadsheets

After every site visit to the Big Basin or Butano Creek peregrine falcon nesting territories fill out a single row in the respective PEFA Observation Summaries spreadsheets:

- Enter **Site** and **Date** in appropriate columns.
- Enter **Observers**: first name initial and full last name for single observer or observer responsible for data, followed by initials only for additional observers.
- Enter **Start** and **End Obs** times for observation session. Use 24-hour time.
- Enter **#Adults** confirmed observed during session.
- Enter **Nesting Status**, and choose only one of the available selections:
  1. Pre-lay: typical behaviors include prey exchanges from male to female, head-low-bow ledge displays, “ichupping” vocalizations, visits by both birds together to prospective nest ledges, and usually some copulations. Female during this time otherwise will exhibit reduced overall activity and spends more time perched and resting for the two weeks prior to egg laying.
  2. Egg Laying: typical behaviors are continued prey exchanges, and an increase in copulations. Female will spend more time in perhaps a few ledges, or will have selected a nest ledge and spend more time in that one until dropping a first egg. She will spend more and more time in nest ledge as she completes clutch.
  3. Incubation: when clutch completed copulations will cease (rarely, there may be a brief copulation attempt by male in the first week of incubation). Prey exchanges continue, and the first incubation exchanges will be observed. Male incubation sessions are shorter than females, usually 1-2 hours compared with 3-5 for females, but this can be quite variable between pairs and individual birds. Females will incubate overnight. Incubation phase is often the quietest period of nesting, and often an incubating female will be less aggressive or defensive towards other raptors or disturbance.
  4. Nestlings: prey exchanges will continue, but no more incubation exchanges are seen. Female will brood nestlings for 12-14 days typically. Once eggs start hatching, the first prey deliveries into the nest will be observed (Note: only use “Prey Delivery” when food taken into nest or to fledglings). Often the female will leave nest and retrieve a cached food item quickly and return to nest to feed hatchlings. Female will often increase her aggressiveness and defensive behavior around hatching, and again at fledging. Once nestlings are large enough to not require brooding, female will be seen out of nest hunting near cliff.
  5. Fledged: prey exchanges and prey deliveries continue, and first fledgling will be observed out of the nest.
  6. Dispersed: only enter when three to six weeks post-fledging the juveniles are no longer seen on a regular basis. Adults may or may not be present at nest cliff.
  7. Failed: enter this when nest is confirmed failed in incubation or nestling phase.<sup>1</sup>

8. Adults Present: enter this if adults are present in cliff area after juvenile dispersal, or early in spring or winter when no nest related behaviors are observed.

9. Unknown

10. Other (see comments)

- **Specific Observations**, enter all that are observed, and use abbreviations. Also include numbers of each specific behavior if more than one, i.e. Cop (3), PrEx (2): Prey Exchange (PrEx), Ledge Displays (LeDi), Copulation (Cop), Incubation Exchange (IncEx), Prey Delivery (PrDel), Fledglings.
- For **Predation Events**, enter all that are observed other than prey exchanges and prey deliveries, and again use abbreviations and numbers when appropriate: Carrying Prey (CaPr) refers to flying OR perched with prey, Plucking (Pl), Cache (Ca) refers to removal or placement of prey items into a hiding spot, Eating (Eat), Chasing Prey Successful (ChPrSu), Chasing Prey Other (ChPrOth).  
NOTE: we do not need at this point to have multiple entries for what might be a single predation event. For example, it is important to note if prey is being chased in vicinity of cliff, but for a series of observations starting with an observed successful kill and ending with feeding fledglings, just enter ChPrSu, and then PrDel under "Specific Observations", and explain in "Comments".

**Comments** should be brief and direct. Use alpha banding codes to identify prey species, and note any unusual circumstances not covered by specific prior entries. <sup>2</sup>