

## Goal Setting Questions

As we described earlier, our objective is to develop an enrichment plan for each of the animals and/or exhibits within Disney's Animal Programs. This first step (goal-setting) involves using our knowledge of the animal's natural and individual history to generate ideas about behaviors that we might want to encourage in the animal's current enclosure (exhibit and holding). Below is a series of questions meant to help in the development of an enrichment plan for a particular species/particular individual animal in its current exhibit by identifying specific needs of the animal and determining enrichment goals for that animal. In this example, we answer these questions in order to develop an enrichment plan for golden-breasted starlings housed in a large free-flight aviary.

### Natural History:

1. What is this species' wild habitat (e.g., desert, tropical rainforest, cover, moisture, concealment/camouflage options, temperature ranges, barriers from conspecifics)? (If specific information on a particular species is unknown, provide information on closely related species/genus/family.)

*Savannah woodland. Open bush country in arid and semi arid areas.*

2. How does the animal in the wild behave in response to changes in temperature and weather? What temperature/humidity range does it experience in the wild?

*Occurs in areas that are largely arid year round. Temperature range 40-105 F. Humidity below 30%. Remains below 1000m.*

3. What are some self-maintenance/comfort behaviors (e.g., preening, grooming, bathing, dust-bathing, wallowing, sunning, panting)? Is there a seasonal molt/shed?

*Comfort behaviors include: preening, dust bathing, sunning, bathing in rain rather than in pools.*

4. When is it most active (diurnal, nocturnal, crepuscular)? Why (e.g., predator avoidance)? Does the activity pattern change seasonally?

*Most actively seen to forage in the cooler parts of the day (morning and evening) but will take advantage of any favorable weather and easy opportunity for insects, etc. Often described as "restless" like many other sturnid species. Behavior does not change throughout season-only to take advantage of termite season.*

5. Does the species in the wild inhabit primarily arboreal, terrestrial or aquatic environments or does it switch between them at times?

*Both arboreal and terrestrial. Tends to fly low (3m) over short distances throughout habitat. Spends much of their time on the ground hopping and running about searching for insects.*

6. What are the main threats to the animal in the wild? What is it likely to be afraid of (e.g., conspecifics, humans)? What different types of predators does it have to look out for in the wild? Are there any anti-predator behaviors (e.g., broken-wing display)?

Where and how does the animal seek refuge in the wild from fearful situations (e.g., loud noises like thunder)? What does fearful behaviors look like?

*Main threats to this species in the wild are habitat loss and use of chemical pesticides and herbicides. Predators are likely to be snakes, raptors, and small cats. This species and other sturnids take aggressive stance toward predators and will dive bomb them and "scold" them loudly until one or the other gives up and moves on. Flight is its most effective means of escaping dangerous or frightening situations.*

7. What are its primary sensory modalities (e.g., sight, smell, sound) for communicating with conspecifics, detecting predators and for finding food, mates, or other social partners?

*Sight, sound, and physical posturing.*

8. What is the social structure of this species (e.g., solitary, dyads, "harem," colonial, leks, polyandry)? What is the average/typical group size?

*Often observed in pair or in flocks of up to 8 birds. Often in the company of other starling species.*

9. What is the average distance between social group members and from neighboring conspecifics?

?

10. Describe the primary social behaviors of this species (e.g., aggression, courtship, affiliative, play).

*Occasional pairs will be involved in chasing each other – prelude to courtship. Carrying nesting material, especially green leaves, is a common sight during courtship and nest building. Female does most of nest building. Occasionally pairs will gang up on single flock member and pursue and displace it relentlessly.*

11. Does the social structure change seasonally or throughout the animal's life (e.g., juvenile versus adult, bachelor groups)?

*Gather in larger flocks during opportunistic feeding and during the dry season. Likely to travel in sub adult or older juvenile flocks before maturity and pair formation.*

12. Does this species defend territories? Does it maintain a home range? What is the size of the home range/territory? Does this species migrate seasonally?

*Territoriality has been reported in captivity. 25% of captive breeding pairs are described as aggressive toward conspecifics. Flocks and pairs will remain in home ranges whose borders are loosely defined and maintained by the birds.*

13. How does the animal advertise its home range or territory (e.g., scent marking, song)? How does the animal attract a mate (e.g., displays, scent marks)? Who displays?

*Attracts mate by visual posturing and carrying nesting material – green leaves and grasses. Eye dilation is also seen when birds come into close proximity to each other.*

14. Where does the animal raise young (nest location/type, den)? What materials does it use to build nests/prepare dens? Are both sexes involved in rearing young? Are the young precocial or altricial? How are the young fed?

*Nests of this species are in holes/cavities in trees-old woodpecker nest and where natural holes have occurred. Builds nests using grasses, twigs, leaves, and lines nest with feathers, fine grass, and hair.*

15. How does the animal locomote through its habitat?

*Flies, walks and hops.*

16. What is the animal's diet type (e.g., omnivore, carnivore, herbivore, nectivore) in the wild? Does diet change seasonally? By age?

*Omnivorous and insectivorous. Bird will gorge on the insect species available at the time (e.g., termites).*

17. What does the animal feed on in the wild? What variety of food does it need to eat? What behaviors does it use to locate and procure the different types of food it needs? Does it use tools to obtain food? Store/cache food?

*Largely feeds on insects in the wild and will occasionally take fruit. In one study, 97% of insects taken were from the ground.*

18. Where does the animal sleep or rest? Does that change seasonally?

*Roost in trees (no change.)*

Any other considerations?

### **Individual History: Review information in ARKS and related studbooks.**

1. Does this animal have any medical problems (e.g., arthritic, obese, diabetic, missing digits, wing damage, pinioned)?

*No.*

2. Does this animal have any behavioral problems (e.g., fearful/aggressive to humans, stereotypy, feather plucking)?

*No.*

Any other considerations (e.g., exhibit at previous institution, hand-raised)?

*No.*

## Current Exhibit: Review information in related husbandry manuals.

1. What is the size of the animal's enclosure (exhibit and holding area)? What are the containment barriers (e.g., chain link, moat)?

*120' x 60' x 45' mesh  
guest walk through aviary*

2. Can the animal use all components of its exhibit? Can it hide? For example, how many places could this animal be out of view of its cagemate?

*Yes. Yes.*

3. How functional is the current exhibit? Does the exhibit facilitate/allow the animal to exhibit natural behaviors? How does the animal interact with exhibit elements?

*Current habitat is very friendly for this bird species. This species seems to be oblivious and largely submissive to its cagemates. Occasional interspecific aggression and displacement.*

4. Where and how is the animal's food (normal diet, enrichment, browse) provided? Does the animal have a preference for one feeding site over another?

*Food is provided on 7 varying pole feeders throughout the habitat. This species is frequently seen feeding in from the bowls located at the lower level about 5 feet from the ground. They will always come to the ground for insects.*

5. Does the physical environment contain elements of novelty (e.g., weather changes, can furniture be changed easily)?

*Yes- all of the above.*

6. What are the animal's opportunities to feed/forage, breed, socialize in species-appropriate ways? Do/can/should animal interact with other species in exhibit?

*Nesting opportunities exist in the aviary for this species. Often takes this species several years to settle into nesting and chick rearing.*

7. Can the animal exhibit normal patterns of behavior? Are components of the physical environment available for this to occur?

*Yes. Yes.*

8. Can the animal make choices about where and how it spends its time? Does the animal have control over acquisition of food? Access to hiding places? Protection from the elements?

*Yes. Yes. Yes. Yes.*

9. Are there any hazards in this enclosure?

*Potentially guests, snakes, fine string dropped by guests, larger bird species, and possible escape.*

Any other considerations?

*No.*

Given these considerations (natural history, individual history, and current exhibit), what behaviors should we attempt to encourage? Discourage?

**Encourage:**

Foraging for insects

Feeding

Feeding on whole fruit in view of guest

Reproduction

Curiosity in any foreign item

Definitely interest and curiosity about feathers and white paper

**Discourage:**

No behaviors identified to discourage at this time.