

# Wildlife Radiology— Some Key Points

## Why Do Radiographs?

Look for:

- Fractures
- Foreign bodies
- Joint changes
- Organ changes
- Eggs/fetuses
- Organ displacement
- Diseases (pneumonia, tumors)
- Treatment success/failure (monitor healing, check bone alignment, etc.)

## Tips for Interpreting Radiographs

- View them in a dark room/lights off
- Always view them in the same direction (e.g., animal facing right)
- Make sure they are labelled R/L, and direction taken (VD, DV, H, OS, etc.)
- Be aware of scale when zooming in! (insignificant things can appear significant)
- Prepare or obtain a 3-D skeleton for comparison, whenever possible
- Use Inverse function when looking at digital rads, in addition to normal view

## Evaluating Soft Tissue

**GI Tract**—stomach and ventriculus are left of midline

- Just cranial to coxofemoral joint on VD
- On lateral, ventriculus is 2/3 way down at level of coxofemoral joint (2/3 between spine & keel)
- Birds normally don't have gas in their GI tracts; many mammals do, especially lower GI
- **Liver**—point of shoulder to hip; liver should fall medial to this on birds; not far past ribs on mammals

**Respiratory**

- **Air sacs** are clear (black)—extend to pubic bones
- Cranial and caudal thoracic air sacs are along alongside the ventriculus
- Abdominal air sacs are caudal to the ventriculus and less distinct
- Generalized air sacculitis not picked up on rads unless very severe; in these cases, the outline of the air sacs may be seen as lines
- Check trachea for obstruction if inspiratory stridor is heard (“squeaking” on inhalation)

**Cardiovascular**

- Birds: Look for cardiac-hepatic waist
- Mammals: In general, the heart should measure ~2.5 to 3.5 intercostal spaces in width, about 65% of the overall internal thoracic height on lateral radiographs

**Lung patterns** in mammals:

- Patchy alveolar pattern (white blotches)– associated with bronchial pneumonia
- Diffuse alveolar pattern (white blotches over all lobes) often fungal or late bacterial pneumonia
- Interstitial pattern (general haziness) – associated with inhaled irritant/toxin or viral pneumonia
- Airborne infections – densities in dorsolateral lungs
- Aspiration: **Ventral lung lobes** are most commonly affected

References

1. Samour J.H. & Naldo J.L. 2007. *Anatomical and Clinical Radiology of Birds of Prey*. Philadelphia, PA: Saunders-Elsevier.
2. Smith S.A. & Smith B.J. 1992. *Atlas of Avian Radiographic Anatomy*. Philadelphia, PA: W. B. Saunders Company.
3. Rubel G.A., Isenbugel E. & Wolvenkamp P. 1991. *Atlas of Diagnostic Radiology of Exotic Pets*. Philadelphia, PA: W.B. Saunders Company.
4. Krautwald-Junghanns, M.E., Pees, M., Reese, S. & Tully, T. 2010. *Diagnostic Imaging of Exotic Pets: Birds-Small Mammals-Reptiles*. Hanover: Schlütersche.
5. Papscoe, V.A., Pokras, M.A., Gillespie, E.N., Janeczko, S.D. & Davis, D. 2001. Detection and diagnosis of avian scapular fractures. *Wildlife Rehabilitation Bulletin* 19(2), 35–41.
6. Visser M., Hespel A.M., de Swarte M. & Bellah J.R. 2015. Use of a caudoventral-craniodorsal oblique radiographic view made at 45° to the frontal plane to evaluate the pectoral girdle in raptors. *Journal of the American Veterinary Medical Association* 247(9), 1037–1041, doi: [10.2460/javma.247.9.1037](https://doi.org/10.2460/javma.247.9.1037).
7. Miller, E. A. (2022). Wildlife radiology. *Wildlife Rehabilitation Bulletin*, 38(1), 17–27. <https://doi.org/10.53607/wrb.v38.242>

Websites

WCV Radiographs: <https://www.wildlifecenter.org/radiographs>

Lafebers: <https://lafeber.com/vet/procedures/radiology/>

Improve Veterinary Practice:

<https://www.veterinary-practice.com/article/how-to-take-and-interpret-avian-radiographs>