

Necropsy protocol for Pygmy Hippopotamus (<i>Choeropsis liberiensis</i>)

Animal identification (Studbook n°, transponder, etc)	
Sex	<input type="checkbox"/> male <input type="checkbox"/> female <input type="checkbox"/> unknown
Date of birth	
Date of death or euthanasia	
Euthanasia/Death	<input type="checkbox"/> Death <input type="checkbox"/> Euthanasia <input type="checkbox"/> unknown
Dam identification (Studbook n°)	
Sire identification (Studbook n°)	
Weight at birth (if available)	
Weight at death	
Date of necropsy	

Gross necropsy performed by (name of prosector(s), institution):

Photography (yes / no):

History (briefly summarize clinical signs, circumstances of death; death / euthanasia; number affected; evidence of struggling; environmental conditions, etc...):

Gross examination worksheet:

- Description of lesions and abnormalities seen:
 1. **Degree:** mild, moderate, severe
 2. **Distribution:** focal, multifocal, locally extensive, disseminated, diffuse, ...
 3. **Localisation:** cranial, caudal, ventral, dorsal, proximal, distal, ...
 4. **Duration:** acute, subacute, chronic
 5. **Tissue** affected
 6. **Modifiers:** describe surface, consistency, shape, colour, size, smell
 7. **Process:** inflammation, fibrosis, tumour, abcess, granuloma
- Obtain samples for bacteriology before contaminating carcass with intestinal content, etc...
- Cut samples of tissues for histopathology (no more than 0.5 to 1 cm in thickness, in 10% buffered formalin at ratio of **1 part tissue to 10 parts formalin**)
- **Polycystic kidney disease (PKD)** has been diagnosed in several pygmy hippopotamus and it is imperative to look carefully for such lesions in every examined individual. Cystic lesions are mostly present in the kidney, but have also been described in the liver, in the

duodenum and in the pancreas.

GENERAL CONDITION: (nutritional status, physical condition)

! Neonates: examine for malformations (cleft palate, deformed limbs, etc)

INTEGUMENTARY SYSTEM: (skin, ears, feet, parasites, hydration)

! Neonates, juveniles: examine umbilicus

without special findings

MUSCULOSKELETAL SYSTEM: (Bones, joints, muscles)

without special findings

BODY CAVITIES: (fat stores, abnormal fluids)

without special findings

HEMOLYMPHATIC SYSTEM : (spleen, lymph nodes, thymus)

without special findings

RESPIRATORY SYSTEM: (nasal cavity, larynx, pharynx, trachea, lungs, regional lymph nodes)

! Neonates: determine if breathing occurred (do the lung tissues float in formalin?)

without special findings

CARDIOVASCULAR SYSTEM: (heart, pericardium, great vessels)

without special findings

DIGESTIVE SYSTEM: (mouth, teeth, oesophagus, stomach, intestines, liver, pancreas, mesenteric lymph nodes)

! Neonates: is milk present in the stomach? Meconium in large intestine?

without special findings

URINARY SYSTEM: (kidneys, ureters, urinary bladder, urethra. **Check for cystic lesions**)

without special findings

Please cut both kidneys lengthwise and check for cysts.

PKD is defined or “reached” when at least three cysts, distributed between both kidneys, are identified.

In addition, please send us both kidneys, even if no cysts were detected; i.e. send

- one half of each kidney, preserved in 4% formalin, and
- the other half of each kidney, deep-frozen, to

Dr. Christian Wenker, Zoo Basel, P. O. Box, CH – 4011 Basel, Switzerland.

REPRODUCTIVE SYSTEM: (testes/ovaries, uterus, vagina, penis, prepuce, prostate, mammary glands, placenta)

without special findings

ENDOCRINE SYSTEM: (adrenals, thyroids, parathyroids, pituitary)

without special findings

NERVOUS SYSTEM: (brain, spinal cord, peripheral nerves)

without special findings

SENSORY ORGANS: (eyes, ears)

without special findings

PRELIMINARY DIAGNOSES (summary of macroscopic findings)

LABORATORY STUDIES (list bacterial, viral, parasitological, toxicologic investigations submitted and results if available)

- Bacteriology: organs:
- Virology: organs:
- Parasitology: organs:
- Toxicologic investigations:
- others:

Often, the zoos receive the reports of laboratory studies after the main necropsy report. Please remember to send us copies of these reports as well (they were often missing in past reports).

Histology:

FIXED TISSUE CHECK LIST: **include section of all lesions**, and if possible samples of following tissues:

Cut samples of tissues for histopathology (no more than 0.5 to 1 cm in thickness, in 10% buffered formalin at ratio of **1 part tissue to 10 parts formalin**) and send the histological slides and/or paraffin blocks to Dr. Christian Wenker, Zoo Basel, P. O. Box, CH – 4011 Basel, Switzerland.

- Lung (sections from several lobes, including a major bronchus)
- Heart (transverse sections from right and left wall and septum, longitudinal sections including atrium, ventricle and valves from right and left sides)
- Thymus (may not be present in adults)
- Trachea
- Thyroids / parathyroids (leave intact)
- Liver (sections from 2 or 3 lobes)
- Adrenal (transverse incision)
- Kidney (cortex and medulla from each kidney; check for cystic lesions)
- Urinary bladder, ureters, urethra
- Spleen (cross section including capsule)
- Lymph nodes (cervical, mesenteric, bronchial, mesenteric, prescapular, popliteal)
- Tongue / tonsils
- Salivary glands
- Oesophagus
- Stomach (sections from fundus, cardia, pylorus)
- Small intestines (duodenum, jejunum, ileum)
- Large intestines (caecum, colon)
- Pancreas
- Reproductive tract (entire uterus and ovaries with longitudinal cuts into lumen of uterine horns. Both testes/epidymis with transversal cuts, prostate)
- Diaphragm and skeletal muscle
- Brain (if possible entire brain with longitudinal incision, incl. pituitary gland)
- Spinal cord (if neurologic disease, sections from cervical, thoracic and lumbar cord)
- Eyes (intact, remove extraocular muscles and periorbital tissues)
- Bones (opened rib or longitudinally sectioned 1/2 femur (marrow must be exposed for proper fixation)
- Skin (abdominal skin, lip, ear pinna)
- Neonates (umbilical stump, including surrounding tissues)