

# Bile Collection Technique in subsistence harvested Beluga Whales (*Delphinapterus leucas*): Proof of Concept Study

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## What We Did

A proof of concept pilot study was conducted during 2014 spring harvest of beluga whales in Point Lay, Alaska to demonstrate that bile collection via the hepatopancreatic duct from harvested beluga whales is a feasible method. Cetaceans do not have a gallbladder but an extra-hepatic bile duct system is present.

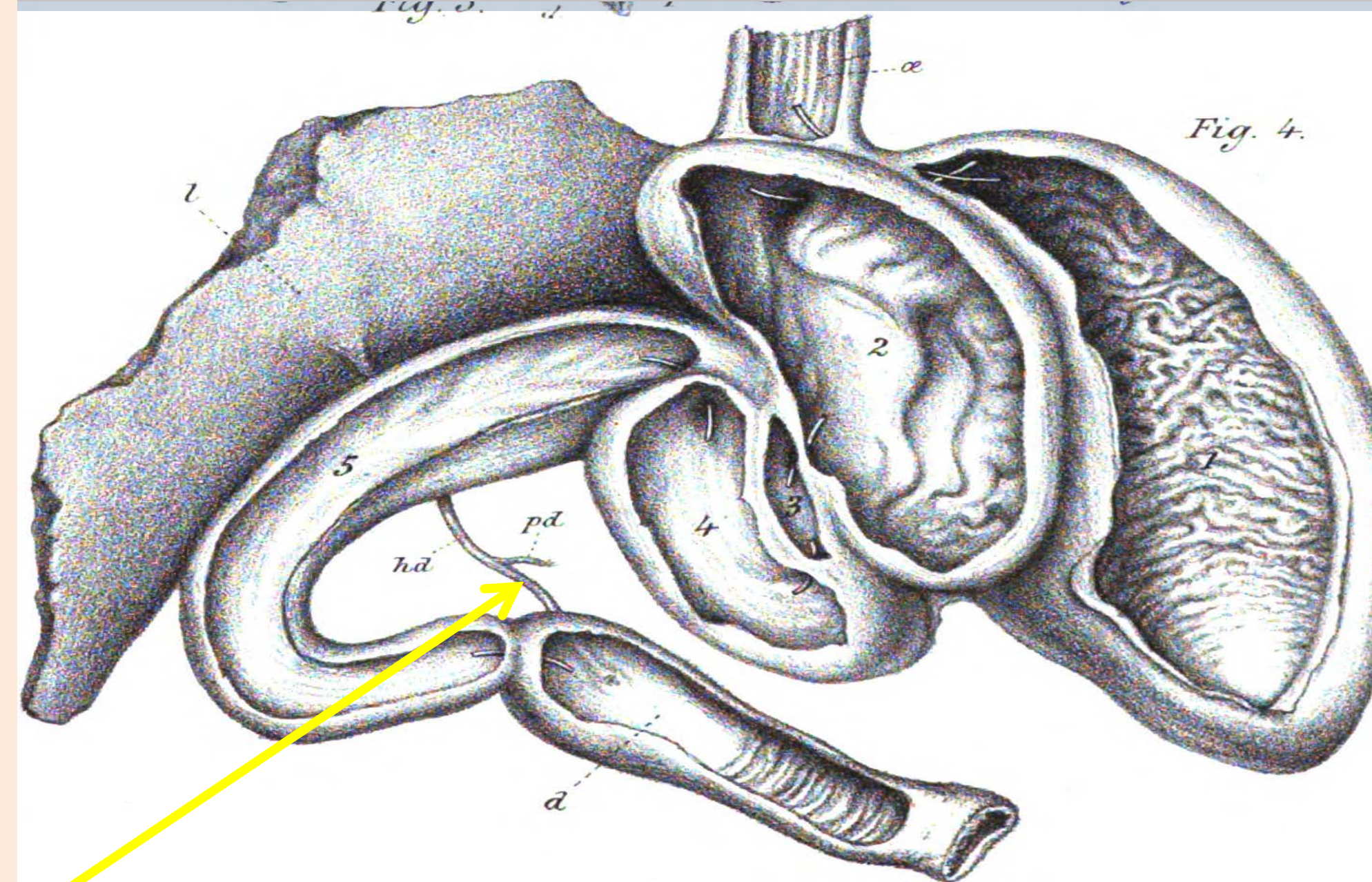
## Why Collect Bile?

- Major excretion route of PAH metabolites via bile and the intestines
- Useful tool for injury assessment during NRDA process

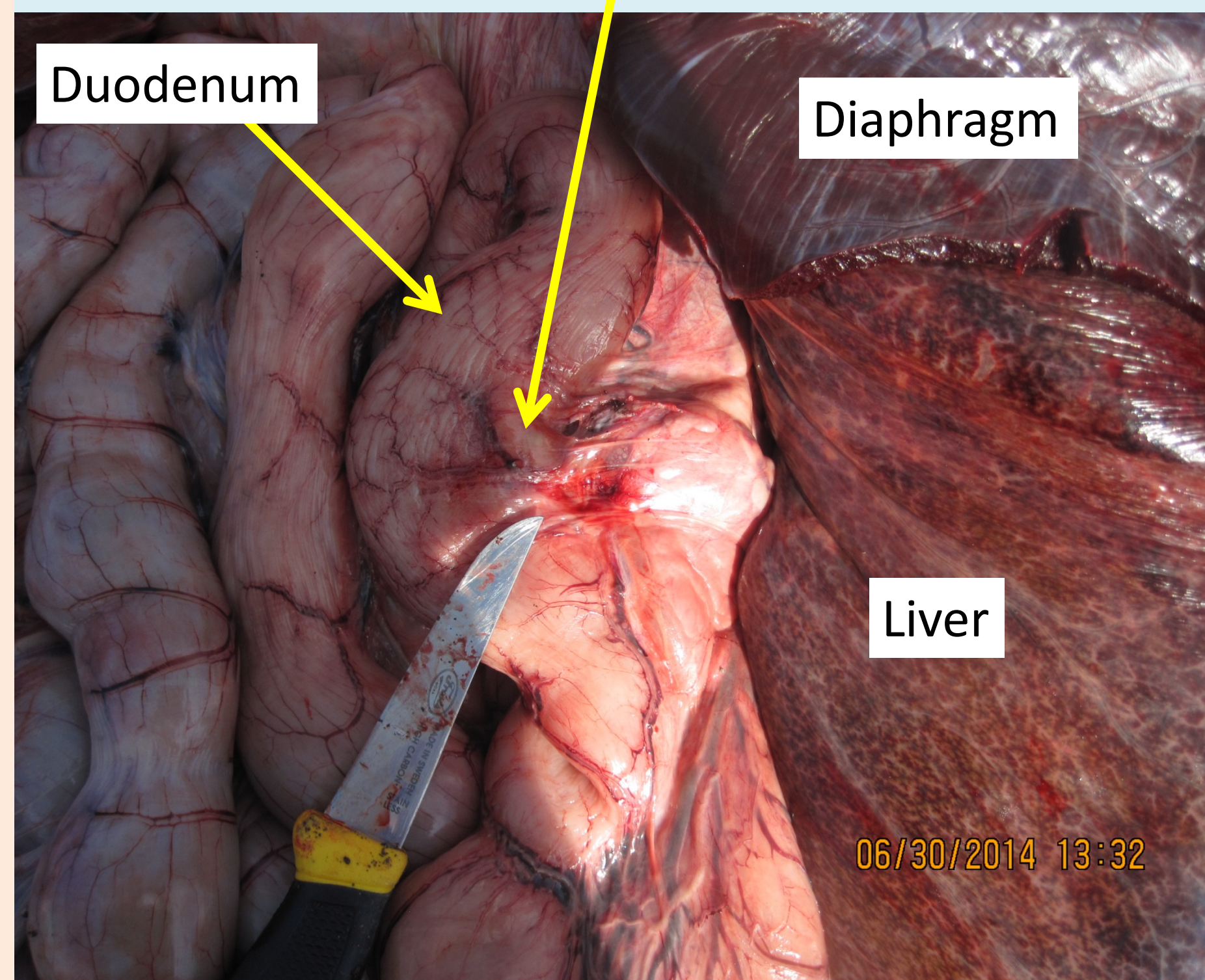
Subsistence Beluga Harvest at Point Lay, Alaska



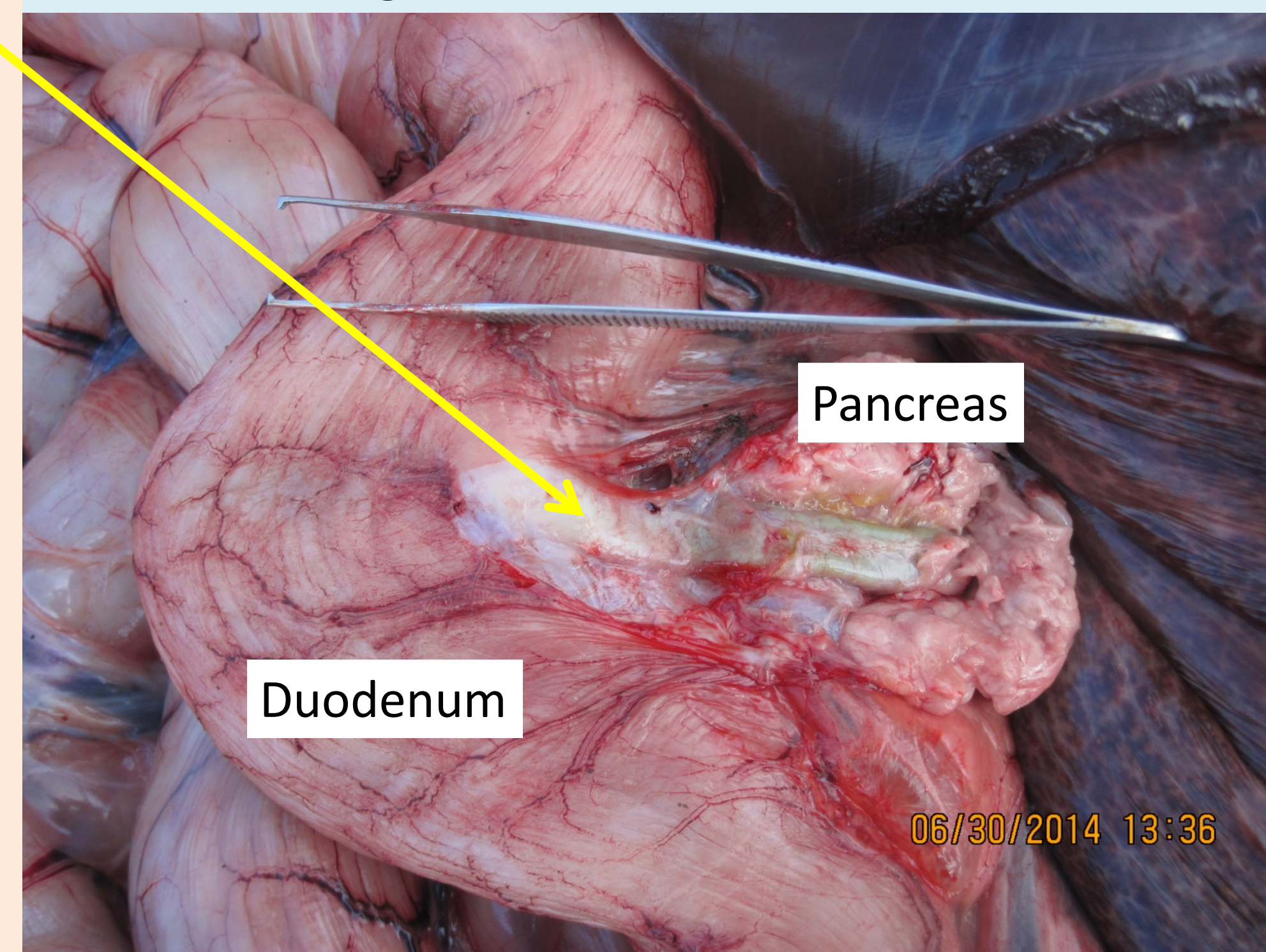
Schematic drawing of stomach compartments and hepatic-pancreatic duct system of the beluga (Watson and Young 1879)



External joining of the hepatopancreatic duct (arrow) with the duodenal wall



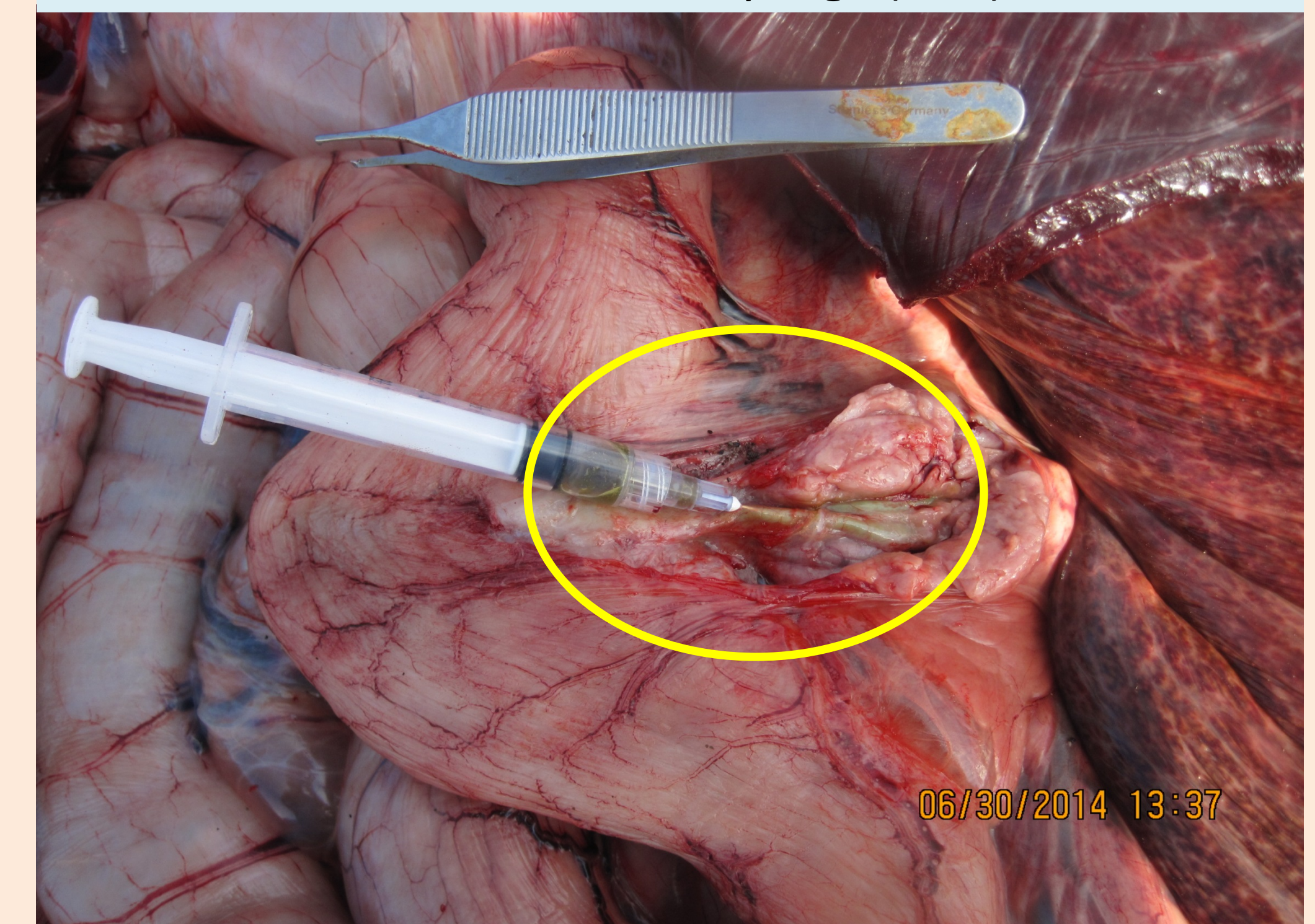
Hepatopancreatic duct (arrow) with pancreatic glandular tissue dissected



## Tips for Bile Collection

- Beluga left side down
- Locate the duodenum and insertion of hepatopancreatic duct
- Deflect pancreatic tissue to visualize hepatic duct
- Hepatopancreatic duct is ~ 1 cm wide, thick walled and ~ 4-5 cm long
- Bile (light grass green color; watery consistency) volume is ~ 0.5 -1.5 cc
- Milking of hepatic tissue recommended to obtain larger volume

Bile collection via syringe (oval)



We thank the hunters, the community and the Village of Point Lay for allowing us to conduct the study using subsistence harvested belugas. Without their efforts and co-operation, this study would not have been possible. Funding for this project is provided by CIAP (Coastal Impact Assessment Program Marine Mammal Health) and NSB Department of Wildlife Management. Marine Mammal tissue collection was conducted under NMFS Permit# 17350-00.

