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Data S1

R scripts and data files to fit the predation probability and functional response models.

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File list (files found within DataS1.zip)

```
CATECSI_data.Rdata
CATEESI_data.Rdata
CATEPTI_data.Rdata
DCCOESI_data.Rdata
DCCOFDI_data.Rdata
FunctionalResponse_Script.R
FunctionalResponse.stan
```

Description

`FunctionalResponse_Script.R` – This R script loads and analyzes mark-recovery data described in the manuscript.

FunctionalResponse.stan – This text file provides the functional response model written in STAN for the functional response analysis.

CATECSI_data.Rdata – Mark-recovery data associated with passive integrated transponder (PIT) tags detected at the nearest upstream dam and recoveries of these tags on the Crescent Island Caspian tern colony.

CATEESI_data.Rdata – Mark-recovery data associated with passive integrated transponder (PIT) tags detected at the nearest upstream dam and recoveries of these tags on the East Sand Island Caspian tern colony.

CATEPTI_data.Rdata – Mark-recovery data associated with passive integrated transponder (PIT) tags detected at the nearest upstream dam and recoveries of these tags on the Potholes Island Caspian tern colony.

DCCOESI_data.Rdata – Mark-recovery data associated with passive integrated transponder (PIT) tags detected at the nearest upstream dam and recoveries of these tags on the East Sand Island double-crested cormorant colony.

DCCOFDI_data.Rdata – Mark-recovery data associated with passive integrated transponder (PIT) tags detected at the nearest upstream dam and recoveries of these tags on the Foundation Island double-crested cormorant colony.

Each of the Rdata files contains the data necessary to run analyses for that colony. Data include the number of years (n_years), weeks (n_weeks), tagged fish available (n_released), tags recovered on the bird colony (n_recovered), colony size (colony_size), and values for informative priors associated with deposition and detection probabilities (dep_a, dep_b, hyp_de_par_mu, hyp_de_par_Omega). R scripts (FunctionalResponse_Script.R) load and run these data files.