

KANSAS STATE VETERINARY DIAGNOSTIC LABORATORY
1800 DENISON AVENUE
MANHATTAN, KS 66506-5606
Laboratory Client Care Phone #: 866-512-5650 Fax #: 785-532-4835
Email: ClientCare@vet.k-state.edu



Owner:
SAVE MASS WILDLIFE

Accession Number: D24-081373
Case Coordinator: STEVE ENSLEY
Received: 12/03/2024
Finalized: 12/06/2024
Species: OWL
Specimen: LIVER

Rdvm:
DR AMANDA LEEF

Clinic:
HEAL VETERINARY CLINIC
150 BELMONT STREET
WATERTOWN, MA 02472

FINAL REPORT

This report supercedes all previous reports for this case

Toxicology

Anticoagulant Panel

Animal Id: SGIRI4E - Belmont Great Horned Owl
Specimen Desc: LIVER

Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	< 5.00	ppb	No Ref Interval
Diphacinone	< 5.00	ppb	No Ref Interval
Coumachlor	6.40	ppb	No Ref Interval
Chlorophacinone	17.35	ppb	No Ref Interval
Brodifacoum	442.00	ppb	No Ref Interval
Difethialone	66.83	ppb	No Ref Interval
Bromadiolone	150.40	ppb	No Ref Interval

Date Reported
December 6, 2024

Reported By
Dr. Yuntao Zhang, PhD, Chemist

Animal Id: VOJUZZ - Arlington Barred Owl
Specimen Desc: LIVER

Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	< 5.00	ppb	No Ref Interval
Diphacinone	< 5.00	ppb	No Ref Interval
Coumachlor	6.40	ppb	No Ref Interval
Chlorophacinone	8.23	ppb	No Ref Interval
Brodifacoum	666.29	ppb	No Ref Interval
Difethialone	45.92	ppb	No Ref Interval
Bromadiolone	24.68	ppb	No Ref Interval

Date Reported
December 6, 2024

KANSAS STATE VETERINARY DIAGNOSTIC LABORATORY
1800 DENISON AVENUE
MANHATTAN, KS 66506-5606
Laboratory Client Care Phone #: 866-512-5650 Fax #: 785-532-4835
Email: ClientCare@vet.k-state.edu



Owner:

SAVE MASSACHUSETTS WILDLIFE

Rdvm:

DR AMANDA LEEF

Clinic:

HEAL VETERINARY CLINIC
150 BELMONT ST
WATERTOWN, MA 02472

Accession Number: D25-005605

Reference Number: VY5GYV9

Case Coordinator: STEVE ENSLEY

Received: 01/28/2025

Finalized: 01/31/2025

Species: OWL

Animal ID: VY5GYU9

Specimen: LIVER

FINAL REPORT

This report supercedes all previous reports for this case

Toxicology

Anticoagulant Panel

Animal Id: VY5GYU9 - Somerville Barred Owl
Specimen Desc: LIVER

Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	< 5.00	ppb	No Ref Interval
Diphacinone	< 5.00	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval
Chlorophacinone	< 5.00	ppb	No Ref Interval
Brodifacoum	135.32	ppb	No Ref Interval
Difethialone	228.59	ppb	No Ref Interval
Bromadiolone	83.47	ppb	No Ref Interval

Date Reported
January 30, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist

TOXICOLOGY INTERPRETATION

Species: OWL
Animal Id: VY5GYU9

Tox Comments
brodifacoum, difethialone and bromadiolone were detected in this owl's liver.

Reported By
Steve Ensley, DVM PhD
Veterinary Toxicologist

KANSAS STATE VETERINARY DIAGNOSTIC LABORATORY
1800 DENISON AVENUE
MANHATTAN, KS 66506-5606
Laboratory Client Care Phone #: 866-512-5650 Fax #: 785-532-4835
Email: ClientCare@vet.k-state.edu



Owner:

SAVE MASSACHUSETTS WILDLIFE

Accession Number: D25-001614

Case Coordinator: STEVE ENSLEY

Received: 01/10/2025

Finalized: 01/16/2025

Specimen: LIVER

Rdvm:

DR AMANDA LEEF

Clinic:

HEAL VETERINARY CLINIC
150 BELMONT ST
WATERTOWN, MA 02472

FINAL REPORT

This report supercedes all previous reports for this case

Toxicology

Anticoagulant Panel

Animal Id:	11/15/24 RTH		
Specimen Desc:	LIVER		
Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	< 5.00	ppb	No Ref Interval
Diphacinone	< 5.00	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval
Chlorophacinone	< 5.00	ppb	No Ref Interval
Brodifacoum	170.95	ppb	No Ref Interval
Difethialone	18.13	ppb	No Ref Interval
Bromadiolone	< 5.00	ppb	No Ref Interval

Date Reported
January 16, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist

Animal Id:	12/21/24 BARRED OWL		
Specimen Desc:	LIVER		
Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	< 5.00	ppb	No Ref Interval
Diphacinone	< 5.00	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval
Chlorophacinone	< 5.00	ppb	No Ref Interval
Brodifacoum	256.85	ppb	No Ref Interval
Difethialone	32.51	ppb	No Ref Interval
Bromadiolone	130.19	ppb	No Ref Interval

Date Reported
January 16, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist

Toxicology

Anticoagulant Panel

Animal Id: 1/4/25 COOPERS HAWK
Specimen Desc: LIVER

Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	< 5.00	ppb	No Ref Interval
Diphacinone	5.73	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval
Chlorophacinone	< 5.00	ppb	No Ref Interval
Brodifacoum	48.26	ppb	No Ref Interval
Difethialone	12.28	ppb	No Ref Interval
Bromadiolone	33.51	ppb	No Ref Interval

Date Reported
January 16, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist

Animal Id: 12/18/24 BARRED OWL
Specimen Desc: LIVER

Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	< 5.00	ppb	No Ref Interval
Diphacinone	< 5.00	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval
Chlorophacinone	< 5.00	ppb	No Ref Interval
Brodifacoum	8.99	ppb	No Ref Interval
Difethialone	< 5.00	ppb	No Ref Interval
Bromadiolone	362.45	ppb	No Ref Interval

Date Reported
January 16, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist

Animal Id: 12/26/24 RTH
Specimen Desc: LIVER

Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	< 5.00	ppb	No Ref Interval
Diphacinone	< 5.00	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval
Chlorophacinone	< 5.00	ppb	No Ref Interval
Brodifacoum	144.91	ppb	No Ref Interval
Difethialone	289.73	ppb	No Ref Interval
Bromadiolone	< 5.00	ppb	No Ref Interval

Date Reported
January 16, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist

Animal Id: 12/16/24 RTH
Specimen Desc: LIVER

Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	< 5.00	ppb	No Ref Interval
Diphacinone	< 5.00	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval

Toxicology

Anticoagulant Panel

Chlorophacinone	< 5.00	ppb	No Ref Interval
Brodifacoum	67.11	ppb	No Ref Interval
Difethialone	464.20	ppb	No Ref Interval
Bromadiolone	< 5.00	ppb	No Ref Interval

Date Reported
January 16, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist

TOXICOLOGY INTERPRETATION

Species: AVIAN
Animal Id: 12/16/24 RTH

Tox Comments
Brodifacoum, difethialone and/or bromadiolone were detected in 1 or more of these liver samples.

Reported By
Steve Ensley, DVM PhD
Veterinary Toxicologist

KANSAS STATE VETERINARY DIAGNOSTIC LABORATORY
1800 DENISON AVENUE
MANHATTAN, KS 66506-5606
Laboratory Client Care Phone #: 866-512-5650 Fax #: 785-532-4835
Email: ClientCare@vet.k-state.edu



Owner:

SAVE MASSACHUSETTS WILDLIFE

Accession Number: D25-011108

Case Coordinator: STEVE ENSLEY

Received: 02/20/2025

Finalized: 02/26/2025

Specimen: LIVER

Rdvm:

DR AMANDA LEEF

Clinic:

HEAL VETERINARY CLINIC
150 BELMONT ST
WATERTOWN, MA 02472

FINAL REPORT

This report supercedes all previous reports for this case

Toxicology

Anticoagulant Panel

Animal Id:	1/27/25 BARRED OWL		
Specimen Desc:	LIVER		
Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	< 5.00	ppb	No Ref Interval
Diphacinone	< 5.00	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval
Chlorophacinone	5.40	ppb	No Ref Interval
Brodifacoum	27.40	ppb	No Ref Interval
Difethialone	14.90	ppb	No Ref Interval
Bromadiolone	582.10	ppb	No Ref Interval

Date Reported
February 26, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist

Animal Id:	1/30/25 RTH		
Specimen Desc:	LIVER		
Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	< 5.00	ppb	No Ref Interval
Diphacinone	< 5.00	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval
Chlorophacinone	< 5.00	ppb	No Ref Interval
Brodifacoum	325.40	ppb	No Ref Interval
Difethialone	266.40	ppb	No Ref Interval
Bromadiolone	79.70	ppb	No Ref Interval

Date Reported
February 26, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist

Toxicology

Anticoagulant Panel

Animal Id: 2/11/25 RTH
Specimen Desc: LIVER

Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	< 5.00	ppb	No Ref Interval
Diphacinone	< 5.00	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval
Chlorophacinone	< 5.00	ppb	No Ref Interval
Brodifacoum	133.80	ppb	No Ref Interval
Difethialone	8.20	ppb	No Ref Interval
Bromadiolone	77.50	ppb	No Ref Interval

Date Reported
February 26, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist

Animal Id: 2/10/25 RTH
Specimen Desc: LIVER

Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	6.90	ppb	No Ref Interval
Diphacinone	< 5.00	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval
Chlorophacinone	5.00	ppb	No Ref Interval
Brodifacoum	350.00	ppb	No Ref Interval
Difethialone	< 5.00	ppb	No Ref Interval
Bromadiolone	< 5.00	ppb	No Ref Interval

Date Reported
February 26, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist

Animal Id: 1/25/25 GH0
Specimen Desc: LIVER

Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	< 5.00	ppb	No Ref Interval
Diphacinone	< 5.00	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval
Chlorophacinone	5.00	ppb	No Ref Interval
Brodifacoum	172.10	ppb	No Ref Interval
Difethialone	78.60	ppb	No Ref Interval
Bromadiolone	39.00	ppb	No Ref Interval

Date Reported
February 26, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist

Animal Id: 2/10/25 BARRED OWL
Specimen Desc: LIVER

Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	< 5.00	ppb	No Ref Interval
Diphacinone	47.30	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval

Toxicology

Anticoagulant Panel

Chlorophacinone	20.50	ppb	No Ref Interval
Brodifacoum	31.80	ppb	No Ref Interval
Difethialone	117.20	ppb	No Ref Interval
Bromadiolone	337.80	ppb	No Ref Interval

Date Reported
February 26, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist

Animal Id: 2/2/25 COOPER'S HAWK
Specimen Desc: LIVER

Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	< 5.00	ppb	No Ref Interval
Diphacinone	< 5.00	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval
Chlorophacinone	5.30	ppb	No Ref Interval
Brodifacoum	15.70	ppb	No Ref Interval
Difethialone	12.00	ppb	No Ref Interval
Bromadiolone	120.00	ppb	No Ref Interval

Date Reported
February 26, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist

TOXICOLOGY INTERPRETATION

Species: HAWK
Animal Id: 2/2/25 COOPER'S HAWK

Tox Comments
all 7 livers submitted tested positive for one or more of the anticoagulants in this pane.

Chlorphacinone, brodifacoum, difethialone, bromadiolone and dicoumarol were found in 1 or more of these livers.

Reported By
Steve Ensley, DVM PhD
Veterinary Toxicologist



Owner:

NOT SPECIFIED

Accession Number: D25-029374

Case Coordinator: STEVE ENSLEY

Received: 04/23/2025

Finalized: 04/29/2025

Specimen: LIVER

Rdvm:

DR AMANDA LEEF

Clinic:

HEAL VETERINARY CLINIC
150 BELMONT ST
WATERTOWN, MA 02472

FINAL REPORT

This report supercedes all previous reports for this case

Toxicology

Anticoagulant Panel

Animal Id:	4-10-25 SQUIRREL		
Specimen Desc:	LIVER		
Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	< 5.00	ppb	No Ref Interval
Diphacinone	< 5.00	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval
Chlorophacinone	< 5.00	ppb	No Ref Interval
Brodifacoum	11.18	ppb	No Ref Interval
Difethialone	82.72	ppb	No Ref Interval
Bromadiolone	< 5.00	ppb	No Ref Interval

Date Reported
April 29, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist

Animal Id:	RED TAILED HAWK 02-21-25		
Specimen Desc:	LIVER		
Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	< 5.00	ppb	No Ref Interval
Diphacinone	< 5.00	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval
Chlorophacinone	< 5.00	ppb	No Ref Interval
Brodifacoum	26.17	ppb	No Ref Interval
Difethialone	275.22	ppb	No Ref Interval
Bromadiolone	45.53	ppb	No Ref Interval

Date Reported
April 29, 2025

Reported By

Toxicology

Anticoagulant Panel

Animal Id: BARRED OWL 3-31-25
Specimen Desc: LIVER

Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	< 5.00	ppb	No Ref Interval
Diphacinone	< 5.00	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval
Chlorophacinone	< 5.00	ppb	No Ref Interval
Brodifacoum	241.40	ppb	No Ref Interval
Difethialone	< 5.00	ppb	No Ref Interval
Bromadiolone	20.03	ppb	No Ref Interval

Date Reported
April 29, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist

Animal Id: RED TAILED HAWK 3-31
Specimen Desc: LIVER

Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	< 5.00	ppb	No Ref Interval
Diphacinone	< 5.00	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval
Chlorophacinone	< 5.00	ppb	No Ref Interval
Brodifacoum	155.84	ppb	No Ref Interval
Difethialone	271.97	ppb	No Ref Interval
Bromadiolone	< 5.00	ppb	No Ref Interval

Date Reported
April 29, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist

Animal Id: BLUE HERON 4-10-25
Specimen Desc: LIVER

Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	< 5.00	ppb	No Ref Interval
Diphacinone	< 5.00	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval
Chlorophacinone	< 5.00	ppb	No Ref Interval
Brodifacoum	53.13	ppb	No Ref Interval
Difethialone	121.05	ppb	No Ref Interval
Bromadiolone	< 5.00	ppb	No Ref Interval

Date Reported
April 29, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist

Animal Id: COOPERS HAWK 3-17-25
Specimen Desc: LIVER

Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	< 5.00	ppb	No Ref Interval
Diphacinone	< 5.00	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval

Toxicology

Anticoagulant Panel

Chlorophacinone	< 5.00	ppb	No Ref Interval
Brodifacoum	< 5.00	ppb	No Ref Interval
Difethialone	< 5.00	ppb	No Ref Interval
Bromadiolone	106.38	ppb	No Ref Interval

Date Reported
April 29, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist

Animal Id: COYOTE 4-17-25
Specimen Desc: LIVER

Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	< 5.00	ppb	No Ref Interval
Diphacinone	< 5.00	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval
Chlorophacinone	< 5.00	ppb	No Ref Interval
Brodifacoum	93.19	ppb	No Ref Interval
Difethialone	55.77	ppb	No Ref Interval
Bromadiolone	526.88	ppb	No Ref Interval

Date Reported
April 29, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist

TOXICOLOGY INTERPRETATION

Species: COYOTE
Animal Id: COYOTE 4-17-25

Tox Comments

a long acting anticoagulant was identified in each of these 7 samples.
some samples contained several long acting anticoagulants.

Reported By
Steve Ensley, DVM PhD
Veterinary Toxicologist



Owner:
NOT SPECIFIED

Accession Number: D25-047828
Case Coordinator: STEVE ENSLEY
Received: 07/01/2025
Finalized: 07/09/2025
Specimen: LIVER

Rdvm:
DR AMANDA LEEF

Clinic:
HEAL VETERINARY CLINIC
150 BELMONT ST
WATERTOWN, MA 02472

FINAL REPORT

This report supercedes all previous reports for this case

Toxicology

Anticoagulant Panel

Animal Id: 06/29/2025 SAW WHET FLEDGELY
Specimen Desc: LIVER

Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	< 5.00	ppb	No Ref Interval
Diphacinone	< 5.00	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval
Chlorophacinone	< 5.00	ppb	No Ref Interval
Brodifacoum	15.24	ppb	No Ref Interval
Difethialone	61.12	ppb	No Ref Interval
Bromadiolone	24.94	ppb	No Ref Interval

Date Reported
July 9, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist

Animal Id: 05/29/25 BLUE HERON
Specimen Desc: LIVER

Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	< 5.00	ppb	No Ref Interval
Diphacinone	< 5.00	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval
Chlorophacinone	< 5.00	ppb	No Ref Interval
Brodifacoum	5.94	ppb	No Ref Interval
Difethialone	5.55	ppb	No Ref Interval
Bromadiolone	7.66	ppb	No Ref Interval

Date Reported
July 9, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist

Toxicology

Anticoagulant Panel

Animal Id: 06/06/25 SQUIRREL OTTAWA RD
Specimen Desc: LIVER

Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	5.19	ppb	No Ref Interval
Diphacinone	< 5.00	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval
Chlorophacinone	< 5.00	ppb	No Ref Interval
Brodifacoum	5.61	ppb	No Ref Interval
Difethialone	5.47	ppb	No Ref Interval
Bromadiolone	13.61	ppb	No Ref Interval

Date Reported
July 9, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist

Animal Id: 06/08/25 RTH
Specimen Desc: LIVER

Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	18.15	ppb	No Ref Interval
Diphacinone	5.45	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval
Chlorophacinone	< 5.00	ppb	No Ref Interval
Brodifacoum	7.74	ppb	No Ref Interval
Difethialone	6.51	ppb	No Ref Interval
Bromadiolone	7.39	ppb	No Ref Interval

Date Reported
July 9, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist

Animal Id: 06/17/25 CHIPMUNK
Specimen Desc: LIVER

Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	< 5.00	ppb	No Ref Interval
Diphacinone	< 5.00	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval
Chlorophacinone	< 5.00	ppb	No Ref Interval
Brodifacoum	129.37	ppb	No Ref Interval
Difethialone	300.70	ppb	No Ref Interval
Bromadiolone	7.38	ppb	No Ref Interval

Date Reported
July 9, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist

Animal Id: 06/23/25 FELINE
Specimen Desc: LIVER

Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	5.02	ppb	No Ref Interval
Diphacinone	< 5.00	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval

Toxicology

Anticoagulant Panel

Chlorophacinone	< 5.00	ppb	No Ref Interval
Brodifacoum	7.34	ppb	No Ref Interval
Difethialone	9.68	ppb	No Ref Interval
Bromadiolone	< 5.00	ppb	No Ref Interval

Date Reported
July 9, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist

Animal Id:	06/29/25 RED TAIL HAWK		
Specimen Desc:	LIVER		
Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	< 5.00	ppb	No Ref Interval
Diphacinone	< 5.00	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval
Chlorophacinone	< 5.00	ppb	No Ref Interval
Brodifacoum	486.37	ppb	No Ref Interval
Difethialone	6.06	ppb	No Ref Interval
Bromadiolone	7.89	ppb	No Ref Interval

Date Reported
July 9, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist

Animal Id:	6/18/25 DOV FLEDGE RTH		
Specimen Desc:	LIVER		
Brodifacoum	64.07	ppb	No Ref Interval
Difethialone	7.54	ppb	No Ref Interval
Bromadiolone	8.97	ppb	No Ref Interval

Date Reported
July 9, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist

TOXICOLOGY INTERPRETATION

Species: HAWK
Animal Id: 6/18/25 DOV FLEDGE RTH

Tox Comments
all of the samples received contained more than one anticoagulant.

contact me with any questions.

Reported By
Steve Ensley, DVM PhD
Veterinary Toxicologist



Owner:

SAVE MASSACHUSETTS WILDLIFE

Accession Number: D25-049084

Case Coordinator: STEVE ENSLEY

Received: 07/07/2025

Finalized: 07/09/2025

Specimen: LIVER

Rdvm:

DR AMANDA LEEF

Clinic:

HEAL VETERINARY CLINIC
150 BELMONT ST
WATERTOWN, MA 02472

FINAL REPORT

This report supercedes all previous reports for this case

Toxicology

Anticoagulant Panel

Animal Id:	SHREW			
Specimen Desc:	LIVER			
Warfarin	< 5.00	ppb		No Ref Interval
Dicoumarol	< 5.00	ppb		No Ref Interval
Diphacinone	< 5.00	ppb		No Ref Interval
Coumachlor	< 5.00	ppb		No Ref Interval
Chlorophacinone	< 5.00	ppb		No Ref Interval
Brodifacoum	6.13	ppb		No Ref Interval
Difethialone	< 5.00	ppb		No Ref Interval
Bromadiolone	< 5.00	ppb		No Ref Interval

Date Reported

July 9, 2025

Reported By

Dr. Yuntao Zhang, PhD, Chemist

Animal Id: GRACKEL

Specimen Desc: LIVER

Warfarin	< 5.00	ppb		No Ref Interval
Dicoumarol	< 5.00	ppb		No Ref Interval
Diphacinone	< 5.00	ppb		No Ref Interval
Coumachlor	< 5.00	ppb		No Ref Interval
Chlorophacinone	5.95	ppb		No Ref Interval
Brodifacoum	< 5.00	ppb		No Ref Interval
Difethialone	< 5.00	ppb		No Ref Interval
Bromadiolone	< 5.00	ppb		No Ref Interval

Date Reported

July 9, 2025

Reported By

Dr. Yuntao Zhang, PhD, Chemist

Toxicology

Anticoagulant Panel

Animal Id: BROAD WING HAWK 7/12/25
Specimen Desc: LIVER

Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	< 5.00	ppb	No Ref Interval
Diphacinone	< 5.00	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval
Chlorophacinone	< 5.00	ppb	No Ref Interval
Brodifacoum	61.37	ppb	No Ref Interval
Difethialone	< 5.00	ppb	No Ref Interval
Bromadiolone	11.28	ppb	No Ref Interval

Date Reported
August 15, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist

Animal Id: GRAY FOX 7/19/25
Specimen Desc: LIVER

Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	< 5.00	ppb	No Ref Interval
Diphacinone	< 5.00	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval
Chlorophacinone	681.81	ppb	No Ref Interval
Brodifacoum	47.56	ppb	No Ref Interval
Difethialone	< 5.00	ppb	No Ref Interval
Bromadiolone	438.47	ppb	No Ref Interval

Date Reported
August 15, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist

Animal Id: SKUNK 7/21/25
Specimen Desc: LIVER

Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	< 5.00	ppb	No Ref Interval
Diphacinone	< 5.00	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval
Chlorophacinone	< 5.00	ppb	No Ref Interval
Brodifacoum	5.62	ppb	No Ref Interval
Difethialone	< 5.00	ppb	No Ref Interval
Bromadiolone	14.11	ppb	No Ref Interval

Date Reported
August 15, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist

Animal Id: RED TAIL HAWK 7/24/25
Specimen Desc: LIVER

Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	< 5.00	ppb	No Ref Interval
Diphacinone	22.23	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval

Toxicology

Anticoagulant Panel

Chlorophacinone	< 5.00	ppb	No Ref Interval
Brodifacoum	< 5.00	ppb	No Ref Interval
Difethialone	< 5.00	ppb	No Ref Interval
Bromadiolone	26.06	ppb	No Ref Interval

Date Reported
August 15, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist

Animal Id: COYOTE 7/25/25
Specimen Desc: LIVER

Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	< 5.00	ppb	No Ref Interval
Diphacinone	< 5.00	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval
Chlorophacinone	12.91	ppb	No Ref Interval
Brodifacoum	7.40	ppb	No Ref Interval
Difethialone	< 5.00	ppb	No Ref Interval
Bromadiolone	1432.55	ppb	No Ref Interval

Date Reported
August 15, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist

Animal Id: SKUNK 7/25/25
Specimen Desc: LIVER

Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	< 5.00	ppb	No Ref Interval
Diphacinone	< 5.00	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval
Chlorophacinone	< 5.00	ppb	No Ref Interval
Brodifacoum	61.57	ppb	No Ref Interval
Difethialone	< 5.00	ppb	No Ref Interval
Bromadiolone	57.32	ppb	No Ref Interval

Date Reported
August 15, 2025

Dr. Yuntao Zhang, PhD, Chemist

Animal Id: TURTLE 07/10/25
Specimen Desc: LIVER

Warfarin	< 5.00	ppb	No Ref Interval
Dicoumarol	< 5.00	ppb	No Ref Interval
Diphacinone	< 5.00	ppb	No Ref Interval
Coumachlor	< 5.00	ppb	No Ref Interval
Chlorophacinone	< 5.00	ppb	No Ref Interval
Brodifacoum	391.32	ppb	No Ref Interval
Difethialone	< 5.00	ppb	No Ref Interval
Bromadiolone	< 5.00	ppb	No Ref Interval

Date Reported
August 15, 2025

Reported By
Dr. Yuntao Zhang, PhD, Chemist