

2.4.3 Terrestrial Assessment - Birds

...To reach the no observed effect level (NOEL), carnivorous birds would need to consume contaminated intestinal tissues for 0.1 day and contaminated muscle for 0.8 day. As the number of feeding days for an adverse effect is less than one, there is an acute risk to carnivorous birds consuming contaminated carcasses or prey items.

...On a chronic basis, the most sensitive endpoint in birds was the testes size. The risk quotients (Estimated Environmental Concentration

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2.4.6 Incident Reports

Canadian incident reports of strychnine poisoning are not available. However, the PMRA requested incident reports of strychnine poisonings from the USEPA. The American incident reports span from 1966 to 2001 and they are divided into categories according to the legality of the use. Incidents that were clear cases of intentional misuse are not considered here.

Over the 20 year period spanning from 1968 to 1988, when above ground use (which include the used pattern for ground squirrel control) were permitted, the USEPA reported a total of 39 incidents. During the 12 year period spanning from 1989 to 2001, when above ground uses were banned, a total of 17 incidents were reported. The majority of reported incidents involved birds and included a large number of incidents involving predatory species. For non-predatory species, the number of individuals killed per incident ranged from as low as one individual to an incident involving thousands of starlings, and includes small species (e.g. songbirds) as well as larger species (e.g. geese). Incidents involving predatory species, such as eagles and other raptors, usually involved only a few individuals per report. Of particular interest is the observation that after above ground uses of strychnine were banned in the United States, the number of reported incidents involving predatory bird species fell to zero.

Incident reports are not necessarily predictive of the magnitude of non-target mortality resulting from strychnine use because the number of unreported incidents is unknown. However these reports do support the conclusion of this risk assessment as they indicate that the use of strychnine does result in primary and secondary poisoning of non-target species.

It should be noted that in Alberta, livestock producers have access to 2% liquid strychnine concentrate, thereby increasing the opportunity for off-label use and stockpiling¹.

The US Department of Agriculture has documented the strychnine-caused death of the following endangered species: Attwaters' greater prairie chickens, burrowing owls, whooping cranes, bald eagles, peregrine falcons, northern aplomado falcons, jagurundi, ocelots and wolves².

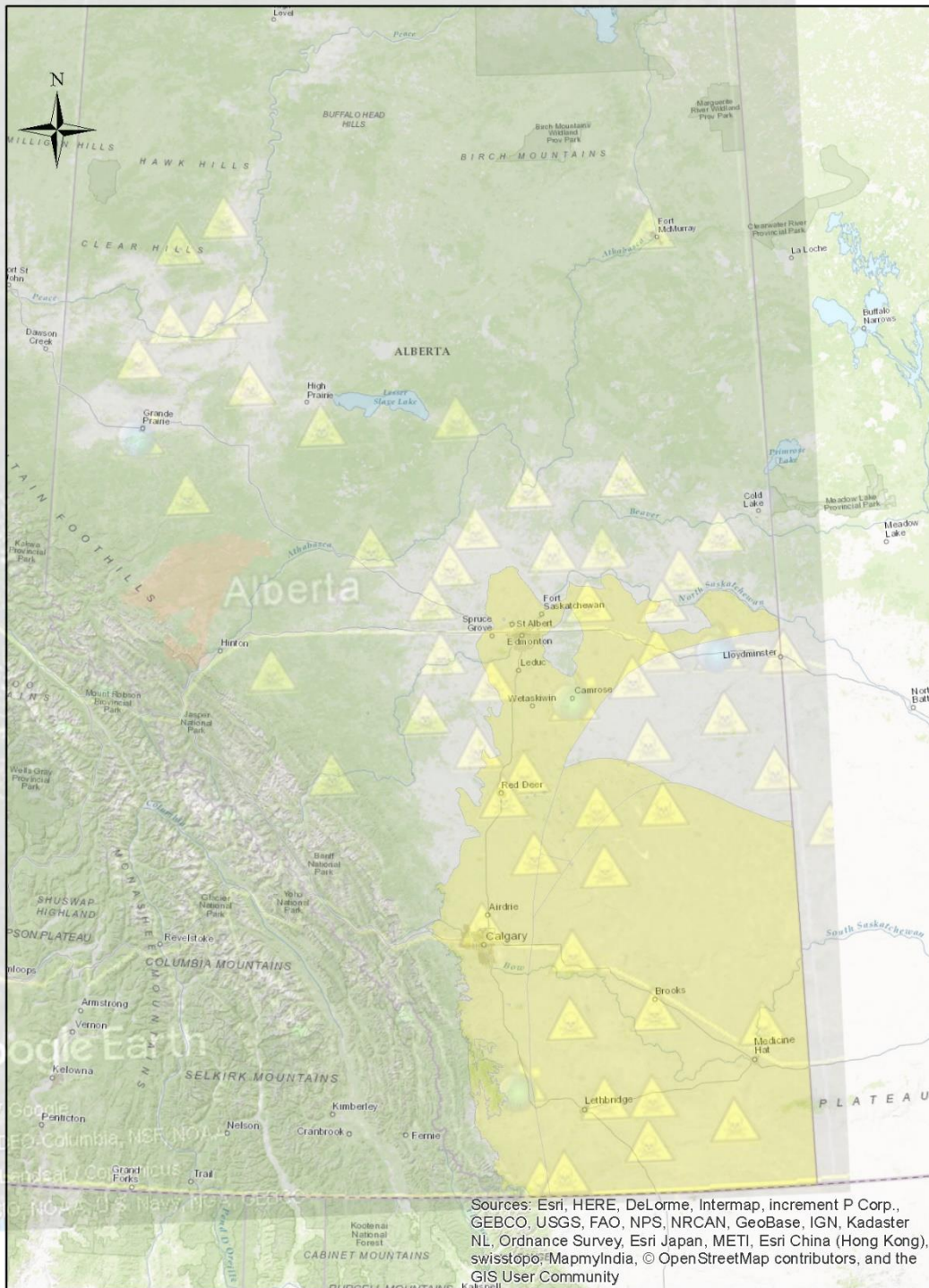
¹ COSEWIC Assessment and Status Report on the Swift Fox *Vulpes velox* in Canada. 2009

² U.S. Department of Agriculture – Animal and Plant Health Inspection Service – Animal Damage Control. 1994. Final Environmental Impact Statement.

The maps below have been put together to demonstrate that compound 1080 is currently being used in areas too close to Burrowing owls and their range. We are not able to show where liquid strychnine is being used, but this use also causes great concern.

Alberta

Sensitive Raptor Range



Google Earth

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 Data Sourced from: Columbia, NSF, NOAA, Imagery provided by Google Earth, Data Sourced from: NOAA, US Navy, NGS, GEBCO

Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

0 50 100 200 300 400 Kilometers

Projection: NAD 1983 10TM AEP Forest
 Source: Alberta Environment and Parks
 Created by: Victoria Lukasik
 Date: April 4, 2017

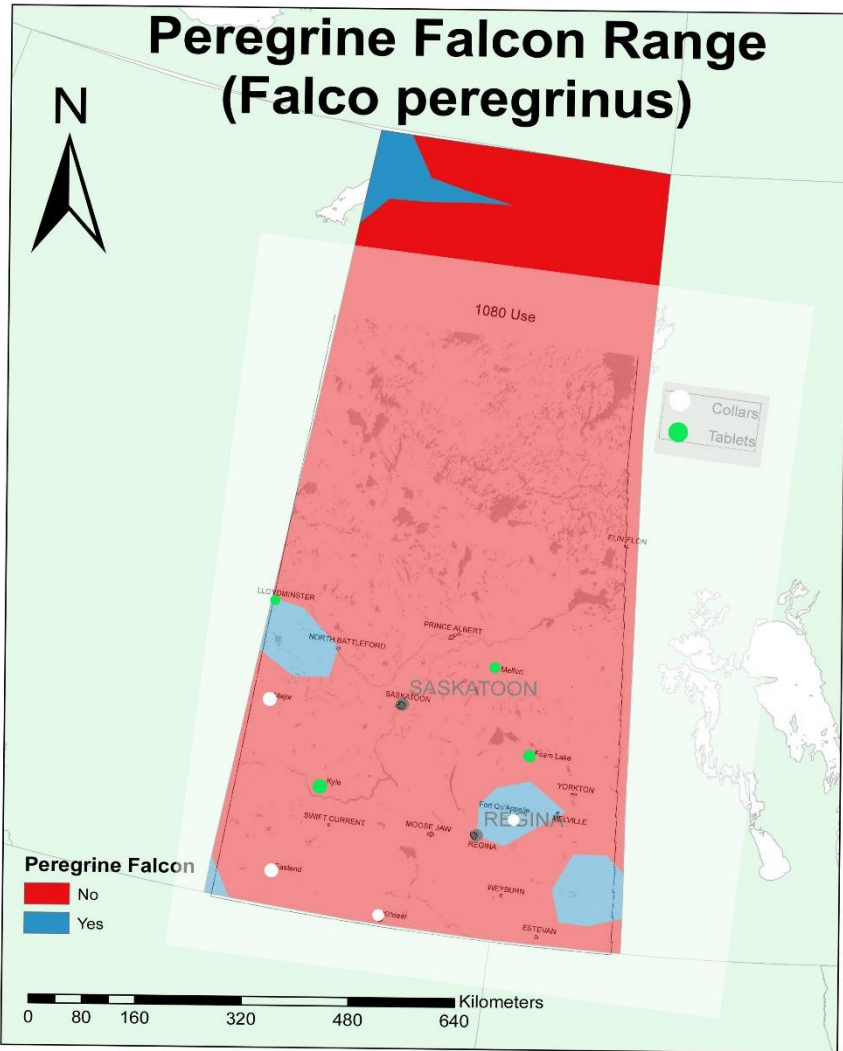
Table

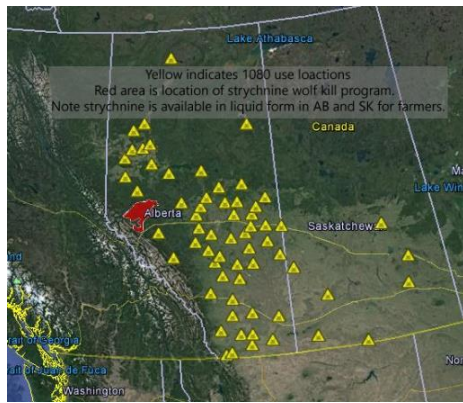


Sensitive Raptor Range

FID	Shape	RANGE	PERIM10TM	AREA10TM	ACRES10TM	HA10TM	SHAPE_STAR	SHAPE_STLe
0	Polygon	Peregrine Falcon	6282.977474	3141177.00014	776.201741	314.1177	3141176.98198	6282.977452
1	Polygon	Peregrine Falcon	6282.977474	3141177.00014	776.201741	314.1177	3141176.98395	6282.977458
2	Polygon	Peregrine Falcon	6282.977474	3141177.00014	776.201741	314.1177	3141177.008	6282.977484
3	Polygon	Peregrine Falcon	6282.977474	3141177.00014	776.201741	314.1177	3141177.00289	6282.977477
4	Polygon	Peregrine Falcon	6282.977474	3141177.00014	776.201741	314.1177	3141177.02263	6282.977502
5	Polygon	Peregrine Falcon	6282.977474	3141177.00014	776.201741	314.1177	3141176.9932	6282.977464
6	Polygon	Peregrine Falcon	6282.977474	3141177.00014	776.201741	314.1177	3141176.98292	6282.97746
7	Polygon	Peregrine Falcon	6282.977474	3141177.00013	776.201741	314.1177	3141176.98672	6282.977471
8	Polygon	Peregrine Falcon	6282.977474	3141177.00013	776.201741	314.1177	3141177.02469	6282.977501
9	Polygon	Prairie Falcon	2187832.01742	108406128567	26787737.753	10840612.8567	108406128608	2187832.01696
10	Polygon	Golden Eagle	2033372.30682	86016261452.5	21255081.0986	8601626.14525	86016261404.800003	2033372.30676
11	Polygon	Ferruginous Hawk	1153286.96417	91683310472.899994	22655439.4086	9168331.04729	91683310478.600006	1153286.96399
12	Polygon	Bald Eagle	2880647.64518	43827240170.599998	10829946.901	4382724.01706	43827240646.199997	2880647.64588
13	Polygon	Peregrine Falcon	6282.977474	3141177.00014	776.201741	314.1177	3141176.98889	6282.977463
14	Polygon	Peregrine Falcon	6282.977474	3141177.00014	776.201741	314.1177	3141177.00491	6282.977483
15	Polygon	Peregrine Falcon	6282.977474	3141177.00014	776.201741	314.1177	3141176.97148	6282.977448
16	Polygon	Peregrine Falcon	6282.977474	3141177.00014	776.201741	314.1177	3141176.99098	6282.977458
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21	Polygon	Peregrine Falcon	6282.98089	3141180.69011	776.202653	314.118069	3141180.69207	6282.980888
22	Polygon	Peregrine Falcon	6282.98089	3141180.69011	776.202653	314.118069	3141180.71151	6282.980912
23	Polygon	Peregrine Falcon	6282.977474	3141177.00013	776.201741	314.1177	3141177.01052	6282.977482
24	Polygon	Peregrine Falcon	6282.977474	3141177.00014	776.201741	314.1177	3141177.00289	6282.977477
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33	Polygon	Peregrine Falcon	6282.977474	3141177.00014	776.201741	314.1177	3141177.04175	6282.977513
34	Polygon	Peregrine Falcon	6282.977474	3141177.00014	776.201741	314.1177	3141177.00268	6282.977478
35	Polygon	Peregrine Falcon	6282.977474	3141177.00013	776.201741	314.1177	3141177.00892	6282.977486
36	Polygon	Peregrine Falcon	6282.977474	3141177.00014	776.201741	314.1177	3141176.97243	6282.977451
37	Polygon	Peregrine Falcon	6282.977474	3141177.00014	776.201741	314.1177	3141177.01021	6282.977481
38	Polygon	Peregrine Falcon	6282.977474	3141177.00013	776.201741	314.1177	3141177.00331	6282.977468
39	Polygon	Peregrine Falcon	6282.977474	3141177.00014	776.201741	314.1177	3141176.99476	6282.97747
40	Polygon	Peregrine Falcon	6282.977474	3141177.00014	776.201741	314.1177	3141176.9846	6282.97747
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42	Polygon	Peregrine Falcon	6282.977474	3141177.00013	776.201741	314.1177	3141176.97981	6282.977451
43	Polygon	Peregrine Falcon	6282.977474	3141177.00014	776.201741	314.1177	3141177.01058	6282.977482
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45	Polygon	Peregrine Falcon	6282.977474	3141177.00014	776.201741	314.1177	3141176.99324	6282.977468

Saskatchewan





Recovery Strategy for the Burrowing Owl
(*Athene cunicularia*) in Canada [Revised proposed version]

2010

