

CHAPTER 6. Opportunistic Species - Multi-species Baseline Initiative

Lucid, M.K., L. Robinson, and S.E. Ehlers. 2016. Multi-species Baseline Initiative project report. 2010-2014. Idaho Department of Fish and Game, Coeur d'Alene, Idaho, USA.

Incorporating opportunistic observations into standardized field protocols is a cost and time effective means of developing datasets for species that may be common and therefore unlikely candidates for inventory funding. It also presents the opportunity to collect data on species which may be rare or in decline without specific funding. Resulting opportunistic datasets may be of lower quality than surveys for targeted species, but in many cases, provide vastly more information than was previously available.

Although opportunistic observations were collected according to standardized protocols the observations were collected ad hoc to surveys which were designed for other species (with the exception of carabids). Therefore, the results in this section should be interpreted with some caution and should not be considered comprehensive surveys. For example, our detection of only 1 western skink (*Plestiodon skiltonianus*) (Map 6-51) is more suggestive that our surveys are not well designed for skinks than that skinks are rare. Nevertheless, our skink observation is 1 of only 5 reported to the state of Idaho during the 2010-2014 study period (IFWIS accessed June 28, 2016) and worthy of note. In this section, species we felt had reasonable detection probabilities are mapped individually (Maps 6-1-37, 52, 54-60). Those, such as skink, that we felt we were less likely to detect when present are mapped in groups of species and displayed with dots (Maps 6-38-48, 49, 51, 53).

Beetles (Tables 6-1-2, Maps 6-1-48)

Coleoptera is the largest family of insects (Gaston 1991) and carabids (ground beetles, Coleoptera: Carabidae) in particular may have some usefulness as bioindicators (Rainio and Niemelä 2003). We invested a small amount of extra effort in our field surveys to collect carabids for these reasons in addition to partner interest. We deployed beetle traps at all terrestrial gastropod survey sites in 2010, 2011, and 2013. Carabids were collected in pitfall traps. We ran Lindgren funnel traps (Lindgren 1983) to capture flying beetles and other insects.

Pitfall traps - Three 8 oz. plastic cups with a 4 cm² piece of Hot Shot® No-Pest fumigant strip (Spectrum Brands, Middletown, WI) were placed 5 meters apart along each gastropod transect to act as pitfall traps. A trowel was used to dig a small hole and then the rim of the cup was placed level with the ground. All material in the traps, including leaf litter and other species, was collected, dried, and stored in coin envelopes at room temperature. Beetles were sorted from the samples in a laboratory environment.

Lindgren funnel traps - We deployed unbaited Lindgren-8 funnel traps (Lindgren 1983) with dry collection cups at 148 of 150 FIA survey sites and Lindgren-8, 12, or 16 funnel traps ($n = 135, 17, 31$ respectively) at 22%, ($n = 183$) of basic survey sites. We placed a 4 cm² piece of fumigant strip in each collection cup. Samples were collected at each site revisit and stored dry in manila coin envelopes. All arthropods in the trap were collected and beetles were separated from other arthropods in a laboratory environment.

Preliminary identification of the 364 beetle samples (each sample was a coin envelope with 0-many individual beetles) collected from 2010-2011 was led by University of Idaho graduate

student Laine Smith who was overseen by Dr. Steve Cook. We detected beetles at 74% ($n = 271$) of the 2010-2011 sites. The preliminary identification of the 2010-2011 collection yielded 5,196 beetle specimens representing 12 families and 69 species. The 2013 pitfall or Lindgren funnel samples have not been sorted to determine beetle detection. Contingent on funding, beetle taxonomy may be completed at a later date.

We mapped carabid species detections on a per species basis because we conducted targeted surveys for that family. Non-carabid detections are mapped in groups because we did not conduct targeted surveys and results should not be considered a comprehensive survey. Because taxonomy is either not verified or not complete, beetle occurrence data contained in this report should be considered preliminary. Pinned specimens of the 2010-2011 sampling are available for examination upon request.

Aquatic Gastropods (Map 6-49)

We occasionally collected aquatic gastropod at very wet terrestrial sites. We identified them to family, genus, or species as our level of expertise allowed.

Fish (Table 6-3, Map 6-50)

Observers recorded fish if they detected them visually or in amphibian dipnets. We provided no training or identification guides for fish taxonomy, but the observer recorded the fish to species if known. More details are provided in chapter 3.

Western Bumblebee (*Bombus occidentalis*) (Table 6-3, Map 6-51)

We recorded western bumblebee observations because this species is thought to be in decline (Cameron et al. 2011) and because it is easily identified. In 2013 and 2014, observers attempted to photograph bumblebees if they were observed at terrestrial or wetland sites. If a bumblebee was detected, observers spent 5 minutes attempting to photograph it. We detected *B. occidentalis* at 3 survey sites and detections were verified by examination of photographs. Photos were verified as *B. occidentalis* if distinctive white 'hairs' were observed on metasomal tergum 4 and sometimes on terga 5 and 6 (Koch et al. 2012). Observers reported unverified *B. occidentalis* detections at additional survey sites. Our surveys were not designed to detect bumblebees and our detection of *B. occidentalis* at only 3 sites should not be used to interpret species status.



Western bumblebee collects pollen from Saint John's Wort (*Hypericum perforatum*)

Photo credit: Shannon Ehlers

Mammals

Alpine Mammals (Table 6-3, Maps 6-51-52) - We recorded detections at 2013 and 2014 wetland and terrestrial sites for a group of easily identified alpine mammals. American pikas (*Ochotona princeps*) were recorded if the species was detected visually or audibly during terrestrial or wetland surveys. Visual observations of golden mantled ground squirrel (*Callospermophilus lateralis*) were recorded. Hoary (*Marmota caligata*) and yellow-bellied (*Marmota flaviventris*) marmots were sometimes first detected audibly but only identified to species by visual characters. We detected 40 pikas, 10 golden mantled ground squirrels, and 3 of each marmot species.

Tree Squirrels (Table 6-3) - We recorded 184 visual or audible red squirrel (*Tamiasciurus hudsonicus*) detections at 2013 terrestrial sites. We chose this ecologically significant common species because it is easy to identify and little standardized data exist for this important component of the prey base of two target SGCN, Canada lynx (*Lynx canadensis*) and fisher (*Pekania pennanti*). We do not provide a map of opportunistic detections in this chapter because a map of standardized bait station detections is provided in chapter 4. The map in chapter 4 does not include these 184 opportunistic detections.

Shrews (Table 6-3, Map 6-53) - We collected 78 shrews incidental to pitfall trapping. Shrews expired in the traps. We stored the carcasses in 95% ethanol until we clipped and dried a small section of tail tissue. Wildlife Genetics International conducted a sequence style species ID test using 16S RNA and mitochondrial gene cytochrome oxidase subunit 1(COI). We detected American pygmy (*Sorex hoyi*; $n = 8$), masked (*Sorex cinereus*; $n = 41$), montane (*Sorex monticolus*; $n = 4$), vagrant (*Sorex vagrans*; $n = 24$), and unknown ($n = 1$) shrews. It is perplexing that we did not detect shrews south of I-90 or in the Priest Lake Basin. Although this was not a targeted shrew survey, we would have expected to detect shrews in those areas since our shrew detections are well distributed throughout the remainder of the study area.

Millipedes

We often found desiccated millipedes while doing timed gastropod leaf litter searches. We detected millipedes at 8% ($n = 80$) of sites surveyed and 8% ($n = 72$) of 879 cells surveyed. We archived specimens and, contingent of funding, taxonomy may be completed at a later date. See chapter 2 for details on leaf litter searching methods.

Plants

We recorded opportunistic observations of 7 easily identified species of plants which were of conservation concern, noxious weeds, or common. Field observers completed a field identification course and were provided field ID keys for the 7 species.

Conservation Concern Plants (Table 6-3, Maps 6-51, 57) - We targeted whitebark pine (*Pinus albicaulis*) during 2013 terrestrial sites because it is a candidate for federal listing under the Endangered Species Act. We targeted sundews (*Drosera* spp.) and rare moonworts (*Botrychium* spp.) at 2013 and 2014 wetland sites based on recommendations of IDFG's botany program because they are considered rare species.

We detected whitebark pine at 13 of the 2013 terrestrial sites. The 13 sites were higher in elevation and had cooler annual mean air temperatures than study area means. The majority of whitebark pine detections were in the Selkirk Mountains in or near the area identified as a potential cool air conservation refugium in chapter 5.

We detected one of our target rare plants, long leaf sundew (*Drosera anglica*), only once. However, this result should not be interpreted as target species rareness. These species are easy to identify but difficult to see and field observers only recorded observations if they happened to observe the species.



Whitebark pine (*Pinus albicaulis*) in the Selkirk Mountains.

Noxious Weeds (Table 6-3, Maps 6-54-55) - We selected 2 easily identified common noxious weeds to include in our surveys because standardized survey data for these species are uncommon and we are unaware of other studies co-locating micro-climate data loggers with surveys. We found tansy (*Tanacetum vulgare*) ($n = 133$ cells) and spotted knapweed (*Centaurea maculosa*; $n = 131$ cells) at sites which tended to be warmer and lower elevation than study area means. This is suggestive that a warming climate may favor further expansion of these species.

Common Plant (Table 6-3, Map 6-54) - Devil's club (*Oplopanax horridus*) is found at moist sites and we hypothesized this species would be a cool air associate. Our data indicate this species is found across the majority of the study area's elevational gradient and is found at sites with cooler

air temperatures than the study area mean (Fig. 6-1). Future analyses could tease out possible variables, including air temperature, which may affect devil's club occurrence.

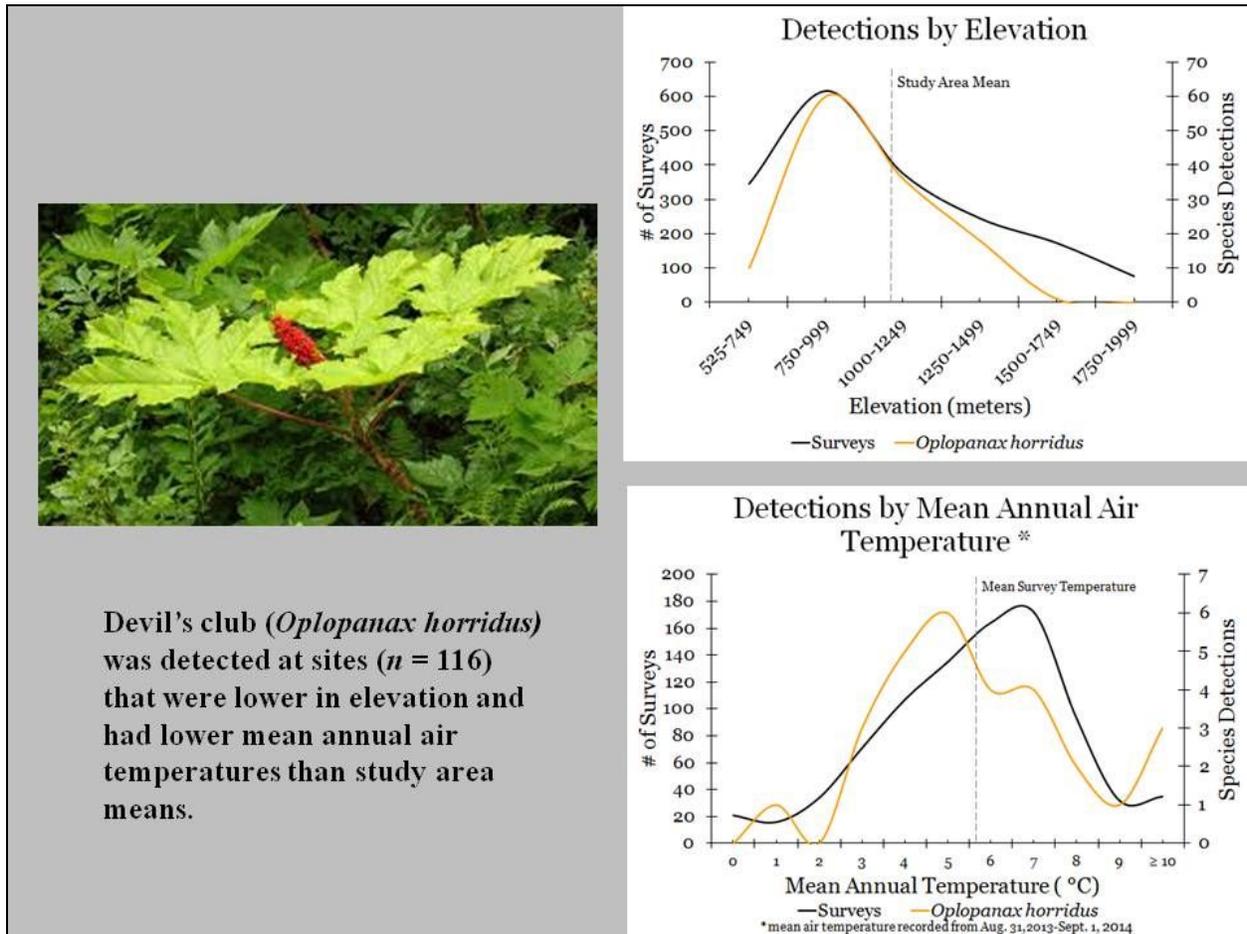


Figure 6-1. Devil's club detections by elevation and air temperature.

Reptiles

We recorded detections of all reptile species known to occur in the study area at terrestrial and/or wetland sites.

Lizards (Table 6-3, Map 6-51) - We detected only 1 western skink and did not detect a single northern alligator lizard (*Elgaria coerulea*). This should not be interpreted as a scarcity of lizards in the study area but rather that our survey techniques are not well designed for lizard detection.

Turtles (Table 6-3, Map-6-58) - We surveyed for turtles by approaching wetlands slowly and scanning for turtles as we approached. We also scanned for turtles as we dip-netted and sometimes caught turtles in dipnets. We detected painted turtles (*Chrysemy picta*) in 22 lower elevation cells. Although painted turtles seem to be readily detectable during dipnet surveys it should be kept in mind that our surveys were conducted during all weather conditions and turtles would not be likely to be detected during cold or cloudy conditions.

Snapping turtles (*Chelydra serpentina*) are not native to our study area and the first verified observation of this species in the Idaho portion of the study area was reported from the Pend Oreille River in 2012 (IFWIS accessed June 28, 2016). From 2012-June 28, 2016 there were 2 photo verified and 2 unverified reports of this species in Lake Pend Oreille or its immediate tributaries (IFWIS accessed June 28, 2016). We did not detect this species during MBI surveys.

Snakes (Table 6-3, Maps 6-59-60) - Several racer (*Coluber constrictor*) records occur in Kootenai County, ID (www.explorer.natureserve.org accessed June 28, 2016) and the Montana portion of the study area (www.fieldguide.mt.gov accessed June 28, 2016). The first verified record in Boundary County, ID occurred near Bonners Ferry in 2011. An additional, unverified, Boundary County report occurred near MacArthur Lake in 2015 (IFWIS accessed June 28, 2016). We did not detect this species, but that result should not be interpreted as species rarity as our surveys were not designed to detect racers.

We did not detect a rubber boa (*Charina bottae*) but this should not be interpreted as a scarcity of rubber boas in the study area but rather our survey techniques are not well designed for rubber boa detection.

Garter snakes, on the other hand, were readily observed while conducting dipnet surveys in warm sunny conditions. We recorded garter snake observations because amphibians are an important prey source for garter snakes (Fitch 1965, Matthews et al. 2002) and garter snake populations have been documented to track amphibian declines in other study areas (Matthews et al. 2002).

We detected common garter snakes (*Thamnophis sirtalis*) in 26 cells and western terrestrial garter snakes (*Thamnophis elegans*) in 60 cells. Terrestrial garter snakes were detected at some terrestrial ($n = 6$) but mostly at wetland sites ($n = 20$). Common garter snakes were detected almost exclusively at wetlands, with only 1 terrestrial detection. This should not be interpreted as a comment on garter snake habitat preference as they are generalists (Fitch 1965), but as an indication that opportunistic detection is more reliable during wetland amphibian surveys than during terrestrial surveys. This is likely because garter snakes can switch to amphibian larvae as a primary prey source during metamorphosis (Gregory 1984, Kephart and Arnold 1982) and tadpoles on pond edges can attract garter snakes. It was not uncommon for us to observe garter snakes eating tadpoles during our surveys.

We used red spots between yellow dorsal stripes as a diagnostic character to distinguish the two species. We identified garter snakes with the red spots as *T. sirtalis* and those without as *T. elegans*. We recognize there are color forms of *T. sirtalis* which do not have red coloration and that our taxonomic differentiation of these 2 species is imperfect (Werner et al. 2004). We also recognize our surveys were conducted in all weather conditions and garter snakes are less likely to be encountered during the cold, wet conditions in which some of our surveys occurred.



Common garter snake (*Thamnophis sirtalis*) preys on non-native American bullfrog (*Lithobates catesbeianus*). Photo credit: Andy Gygli

Conclusions

Our study design allowed for opportunistic yet standardized detection of 89 species and associated microclimate data across a large study area. Most of the 89 species would be unlikely candidates for a successful inventory funding proposal. Although our surveys had varying levels of detection imperfection, they represent the most comprehensive inventory of these species to date in the Idaho Panhandle and adjoining mountain ranges.

Literature Cited

Cameron, S. A., J.D. Lozier, J.P. Strange, J.B. Koch, N. Cordes, L.F. Solter, & T.L. Griswold. 2011. Patterns of widespread decline in North American bumble bees. *Proceedings of the National Academy of Sciences*, 108(2), 662-667.

Fitch, H.S. 1965. An ecological study of the garter snake, *Thamnophis sirtalis*. University of Kansas Museum of Natural History Publication, 15(10), 493-564.

Gaston, K. J. 1991. The magnitude of global insect species richness. *Conservation Biology*, 5(3), 283-296.

Gregory, P.T. 1984. Habitat, diet and composition of assemblages of garter snakes (*Thamnophis*) at eight sites on Vancouver Island (Canada). *Canadian Journal of Zoology*, 62(10), 2013-2022.

Kephart, D.G. and S.J. Arnold. 1982. Garter snake diets in a fluctuating environment: a seven-year study. *Ecology*, 63(5), 1232-1236.

Koch, J., J. Strange & P. Williams. 2012. *Bumble bees of the western United States*.

Lindgren, B. S. 1983. A multiple funnel trap for scolytid beetles (Coleoptera). *The Canadian Entomologist*, 115(03), 299-302.

Matthews, K. R., R.A. Knapp, & K.L. Pope. 2002. Garter snake distributions in high-elevation aquatic ecosystems: is there a link with declining amphibian populations and nonnative trout introductions? *Journal of Herpetology*, 36(1), 16-22.

Rainio, J., & J. Niemelä. 2003. Ground beetles (Coleoptera: Carabidae) as bioindicators. *Biodiversity & Conservation*, 12(3), 487-506.

Werner, JK, BA Maxell, P. Hendricks, and D.L. Flath. 2004. *Amphibians and reptiles of Montana*. Mountain Press Publishing, United States.

Table 6-1. Carabid (ground beetle) species detected during 2010-2011 MBI surveys

Latin Name ^a	# Cells Detected ^b	Latin Name ^a	# Cells Detected ^b
<i>Agonum errans</i>	1	<i>Harpalus seclusus</i>	9
<i>Agonum quadratum</i>	1	<i>Loricera decempunctata</i>	2
<i>Amara discors</i>	2	<i>Microlestes major</i>	1
<i>Amara latior</i>	1	<i>Notiophilus aquaticus</i>	2
<i>Amara obesa</i>	2	<i>Poecilus laetulus</i>	1
<i>Blethisa oregonensis</i>	1	<i>Pterostichus castaneus</i>	7
<i>Calosoma cancellatum</i>	5	<i>Pterostichus ecarinatus</i>	4
<i>Calosoma moniliatum</i>	3	<i>Pterostichus herculaneus</i>	63
<i>Calosoma wilkesi</i>	3	<i>Pterostichus laetulus</i>	2
<i>Carabus granulatus</i>	5	<i>Pterostichus melanarius</i>	12
<i>Carabus nemoralis</i>	21	<i>Pterostichus neobrunneus</i>	1
<i>Carabus taedatus</i>	51	<i>Pterostichus oregonus</i>	4
<i>Cicindela longilabris</i>	3	<i>Pterostichus pumilus</i>	5
<i>Cychrus hemphilli rickseckeri</i>	5	<i>Pterostichus sphodrinus</i>	92
<i>Diplocheila impressicollis</i>	1	<i>Scaphinotus marginatus</i>	58
<i>Elaphrus clairvillei</i>	1	<i>Scaphinotus merkelii</i>	27
<i>Harpalus affinis</i>	1	<i>Scaphinotus relictus</i>	87
<i>Harpalus nigratarsus</i>	1	<i>Zacotus matthewsii</i>	83
<i>Harpalus rufipes</i>	1		

^a Species ID should be considered preliminary. Pinned specimens are available for examination.

^b 357 cells were surveyed with unbaited pitfall traps.

Table 6-2. Non-carabid beetle species detected during 2010-2011 MBI surveys

Family	Latin Name ^a	# Cells Detected ^b
Buprestidae (Jewel Beetles)	<i>Buprestis aurulenta</i>	1
	<i>Buprestis lyrata</i>	1
	<i>Chalcophora angulicollis</i>	1
	<i>Dicerca tenebrosa</i>	1
Cerambycidae (Long Horned Beetles)	<i>Evodinus monticola</i>	1
	<i>Judolia montivagans</i>	1
	<i>Leptura obliterata</i>	2
	<i>Megasemum asperum</i>	1
	<i>Monochamus oregonensis</i>	1
	<i>Neanthophylax mirificus</i>	1
	<i>Stictoleptura canadensis</i>	3
	<i>Trachysida aspera</i>	1
	<i>Xestoleptura crassipes</i>	2
	<i>Xestoleptura tibiolis</i>	1
	<i>Xylotrechus longitarus</i>	1
Cucujidae (Flat Bark Beetles)	<i>Cucujus clavipes</i>	2
Curculionidae (True Weevils)	<i>Lepesoma verrucifera</i>	2
Elateridae (Click Beetles)	<i>Ctenicera bombycina</i>	1
	<i>Ctenicera resplendens</i>	1
	<i>Ctenicera semimetallica</i>	2
	<i>Danosoma brevicornis</i>	3
	<i>Hemicrepidius morio</i>	1
Geotrupidae (Earth Boring Dung Beetles)	<i>Odonteus obesus</i>	6
Pyrochroidae (Fire-Colored Beetles)	<i>Ischalia vancouverensis</i>	2
Silphidae (Carrion Beetles)	<i>Heterosilpha ramosa</i>	8
	<i>Nicrophorus defodiens</i>	16
	<i>Thanatophilus coloradensis</i>	3
Tenebrionidae (Darkling Beetles)	<i>Coelocnemis californica</i>	11
	<i>Upis ceramboides</i>	1
Trogossitidae (Bark-gnawing Beetles)	<i>Temnoscheila chlorodia</i>	1
Zopheridae (Ironclad Beetles)	<i>Phellopsis porcata</i>	12

^a Species ID should be considered preliminary. Pinned specimens are available for examination.

^b 357 cells were surveyed with un-baited pitfall traps. 183 of those cells were also surveyed with unbaited 4-16 funnel Lingren traps

Table 6-3. Opportunistic detections at terrestrial and wetland survey sites during 2013-2014 MBI surveys

Common Name	Latin Name	Terrestrial ^a	Wetland ^a	# Cells Detected
Fish^b				
Any Fish Species		No	Yes	217
Insect^c				
Western Bumblebee	<i>Bombus occidentalis</i>	Yes	Yes	5
Mammals^b				
American Pika	<i>Ochotona princeps</i>	Yes	Yes	40
Golden Mantled Ground Squirrel	<i>Callospermophilus lateralis</i>	Yes	Yes	10
Hoary Marmot	<i>Marmota caligata</i>	Yes	Yes	3
Red Squirrel	<i>Tamiasciurus hudsonicus</i>	Yes	No	184
Yellow-bellied Marmot	<i>Marmota flaviventris</i>	Yes	Yes	3
Mammals (Shrews)^d				
American Pygmy Shrew	<i>Sorex hoyi</i>	Yes	No	8
Masked Shrew	<i>Sorex cinereus</i>	Yes	No	41
Montane Shrew	<i>Sorex monticolus</i>	Yes	No	4
Vagrant Shrew	<i>Sorex vagrans</i>	Yes	No	24
Millipedes^e				
Any Millipede Species	Diplopoda	Yes	No	72
Plants^b				
Devil's Club	<i>Oplopanax horridus</i>	Yes	Yes	116
Long Leaf Sundew	<i>Drosera anglica</i>	No	Yes	0
Rare Moonwort	<i>Botrychium spp.</i>	No	Yes	0
Round Leaf Sundew	<i>Drosera rotundifolia</i>	No	Yes	1
Spotted Knapweed	<i>Centaurea maculosa</i>	Yes	Yes	131
Tansy	<i>Tanacetum vulgare</i>	Yes	Yes	133
Whitebark Pine	<i>Pinus albicaulis</i>	Yes	Yes	13
Reptiles^b				
Common Garter Snake ^f	<i>Thamnophis sirtalis</i>	Yes	Yes	26
Northern Alligator Lizard	<i>Elgaria coerulea</i>	Yes	No	0
Northern Rubber Boa	<i>Charina bottae</i>	Yes	No	0
Painted Turtle	<i>Chrysemys picta</i>	No	Yes	22
Racer	<i>Coluber constrictor</i>	Yes	No	0
Snapping Turtle	<i>Chelydra serpentina</i>	No	Yes	0
Western Skink	<i>Plestiodon skiltonianus</i>	Yes	No	1
Western Terrestrial Garter Snake ^f	<i>Thamnophis elegans</i>	Yes	Yes	60

^a Detection/no-detection box provided on terrestrial or wetland datasheet

^b 3 Visual or audible field identification

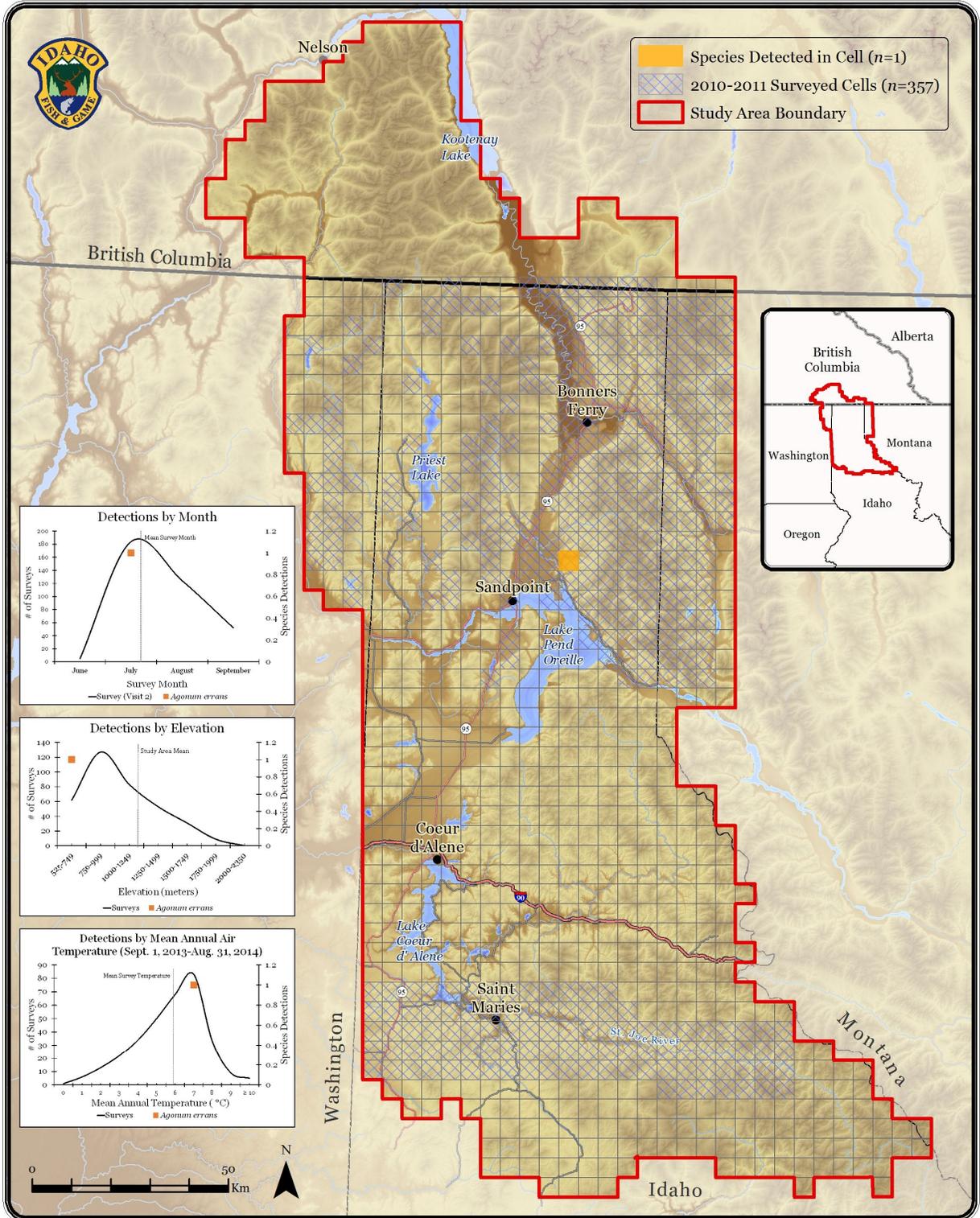
^c Observations verified via photograph

^d Observations verified genetically

^e Specimens collected from leaf litter

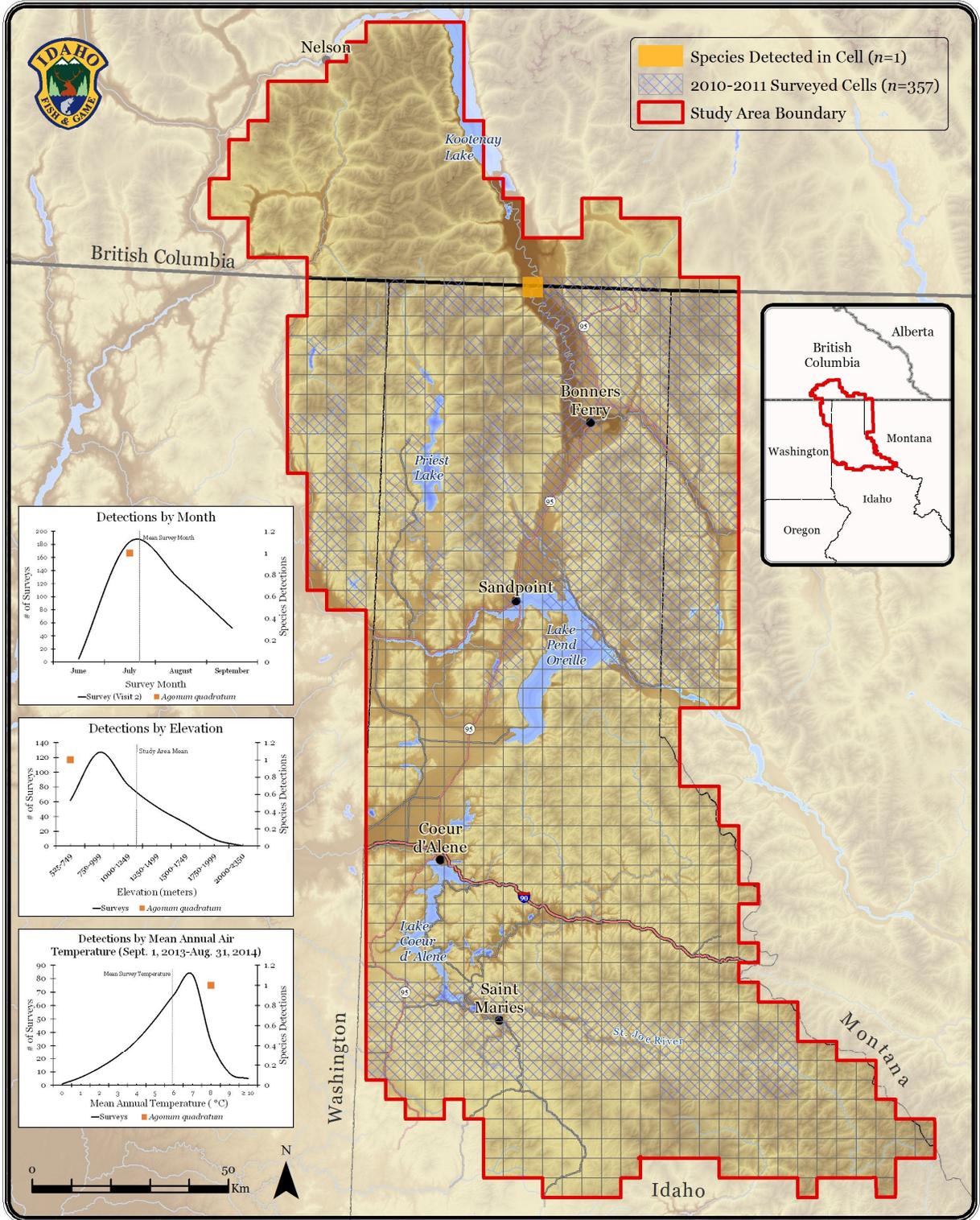
^f Garter snake species ID should be interpreted cautiously as species were differentiated in the field by presence (*T. sirtalis*) or absence (*T. elegans*) of red dorsal markings.

Multi-species Baseline Initiative: *Agonum errans* Detections



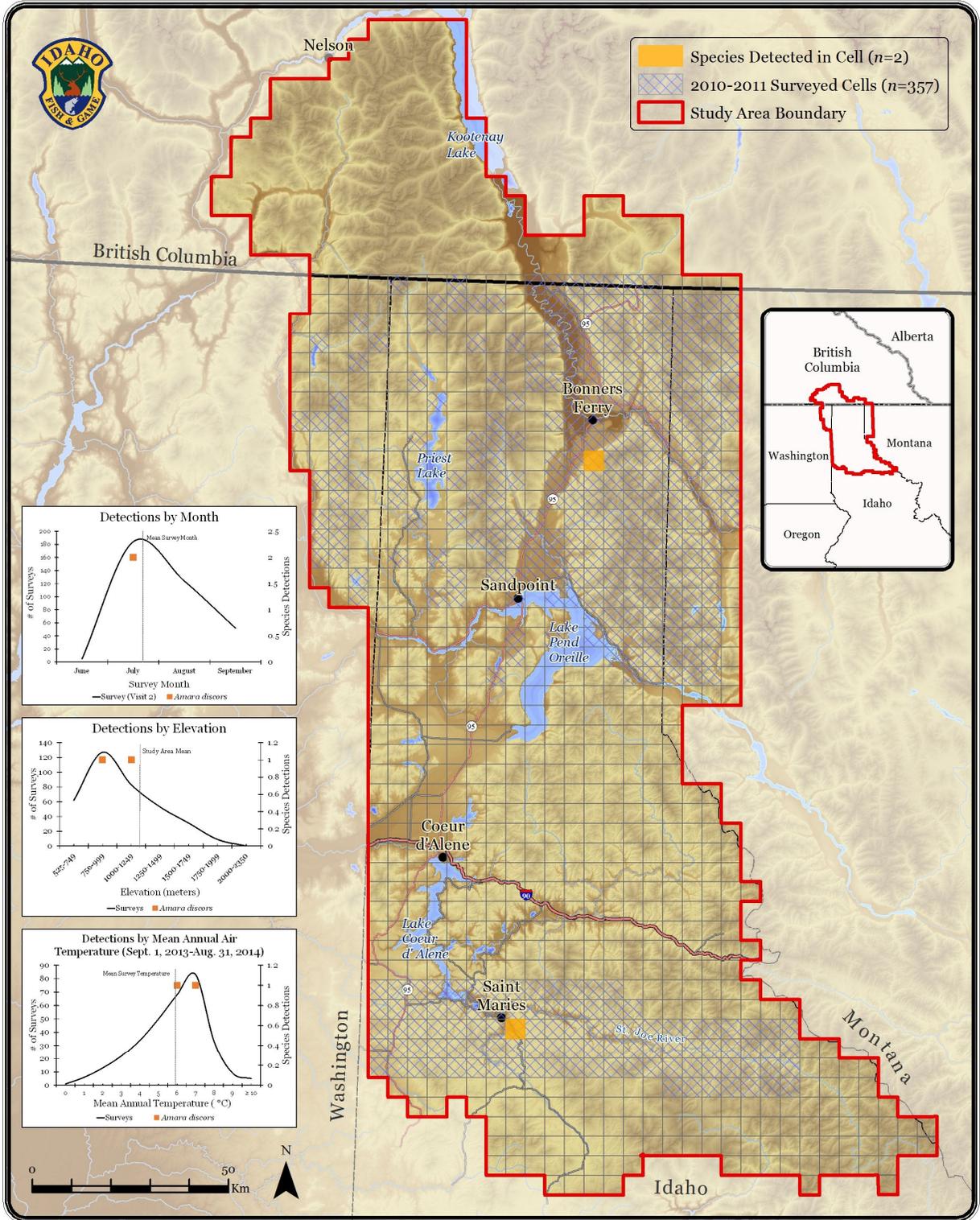
Map 6-1.

Multi-species Baseline Initiative: *Agonum quadratum* Detections



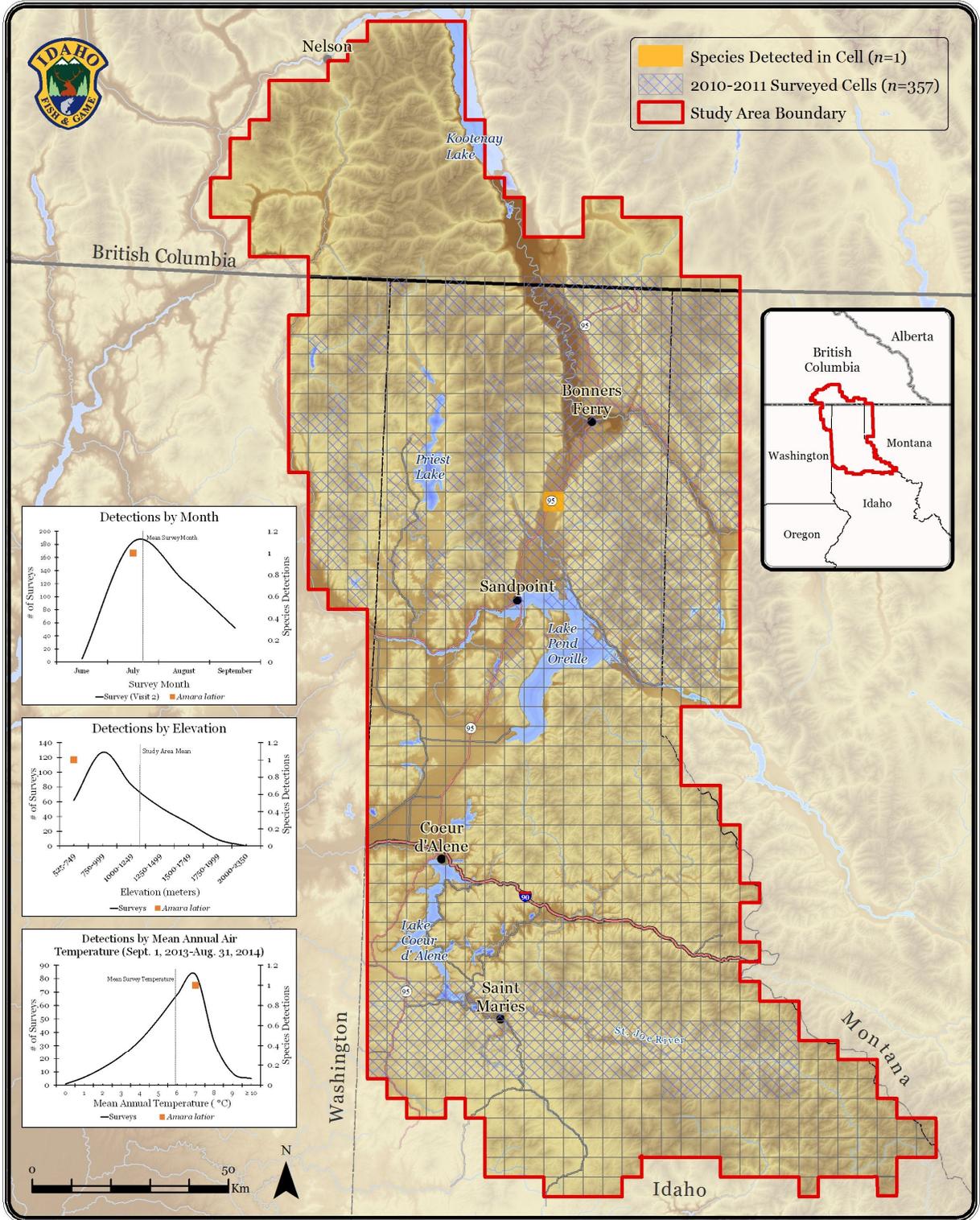
Map 6-2.

Multi-species Baseline Initiative: *Amara discors* Detections



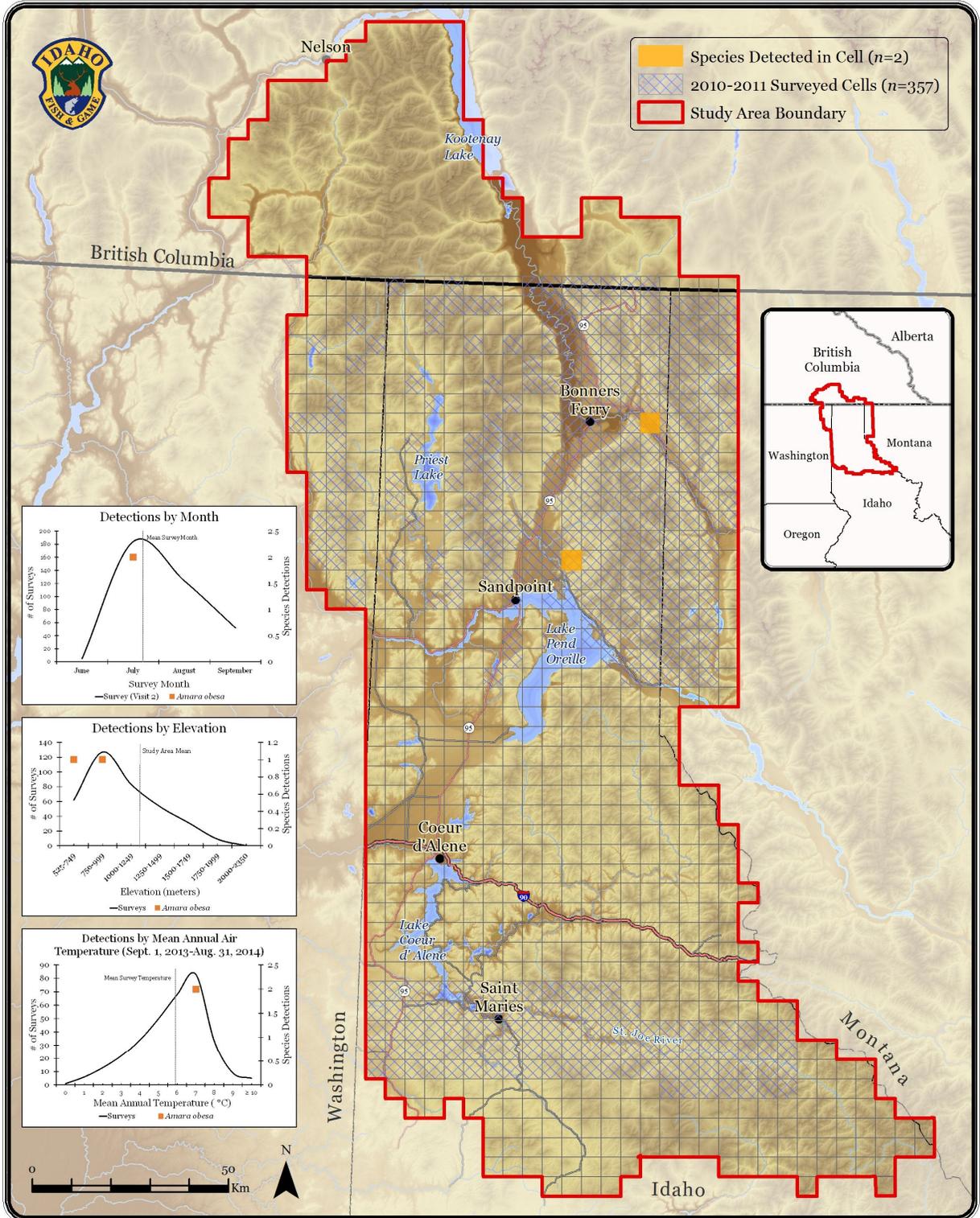
Map 6-3.

Multi-species Baseline Initiative: *Amara latior* Detections



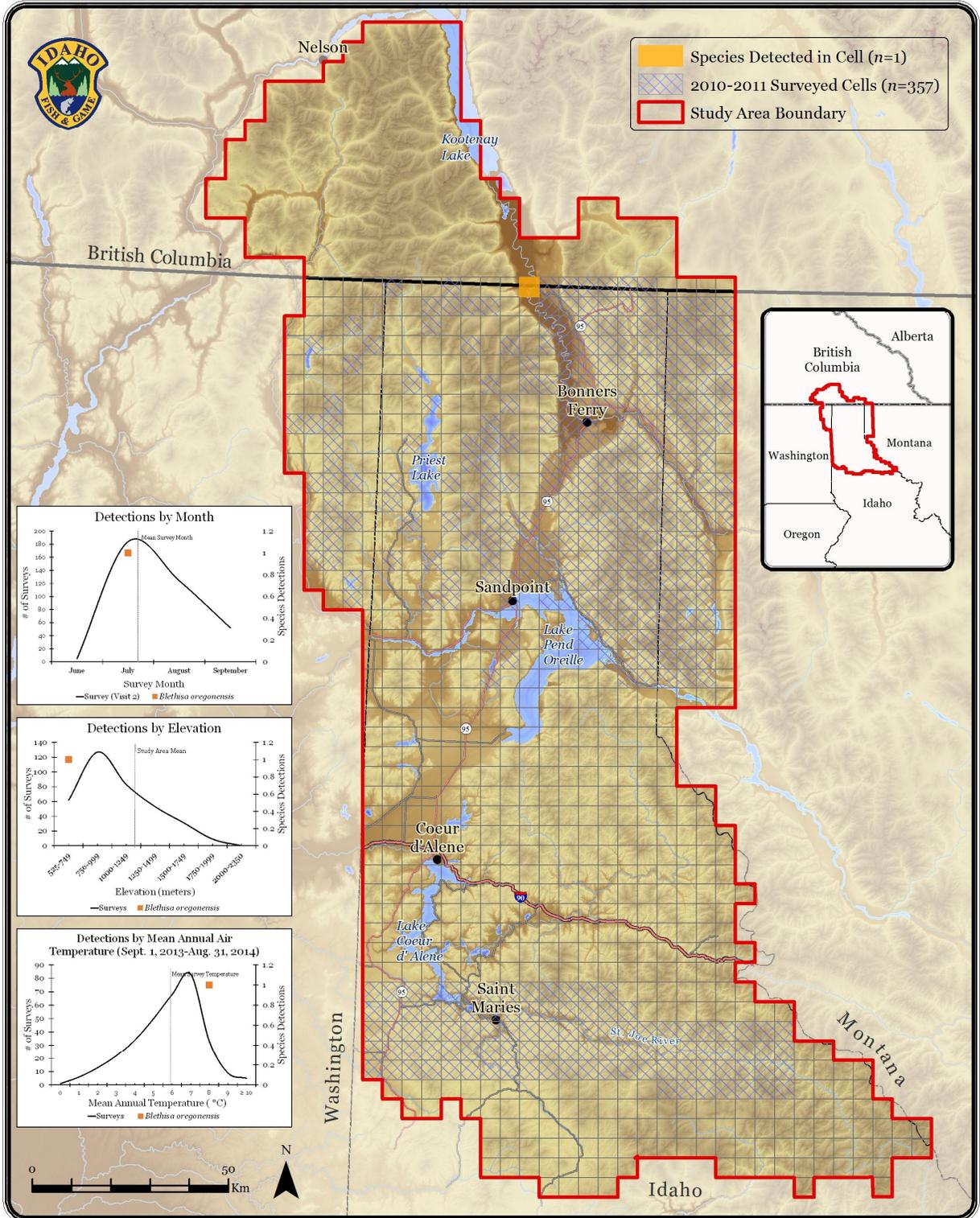
Map 6-4.

Multi-species Baseline Initiative: *Amara obesa* Detections



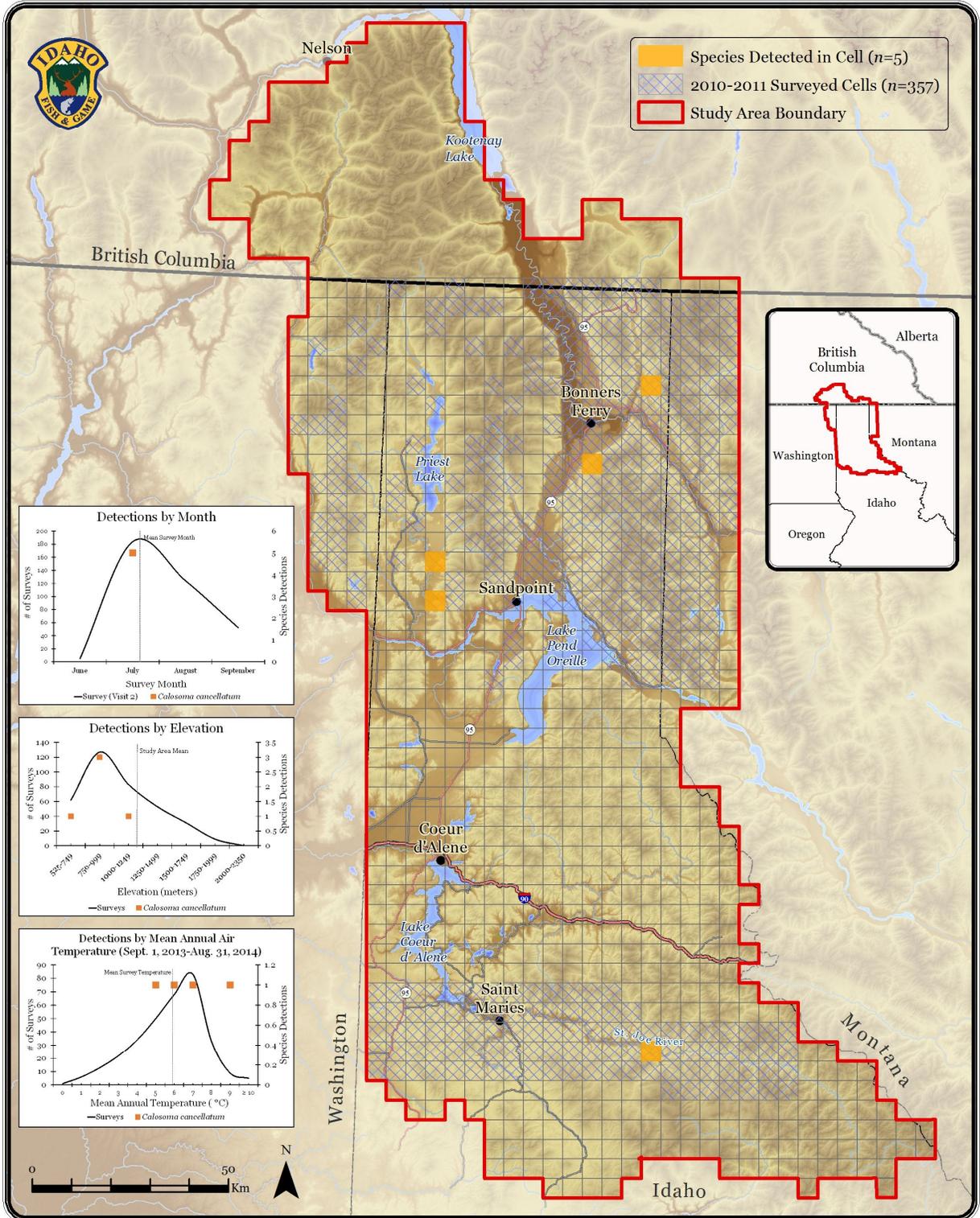
Map 6-5.

Multi-species Baseline Initiative: *Blethisa oregonensis* Detections



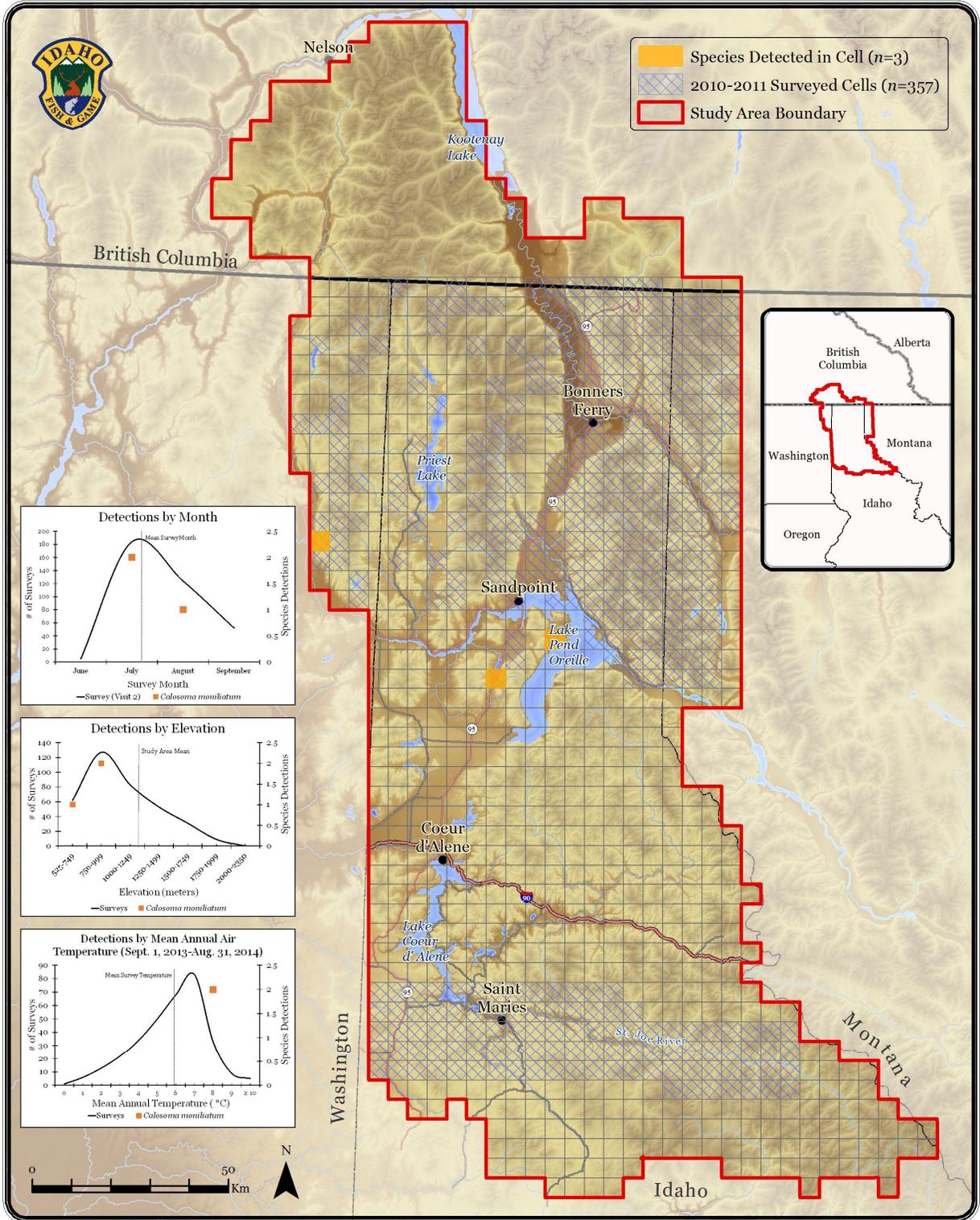
Map 6-6.

Multi-species Baseline Initiative: *Calosoma cancellatum* Detections



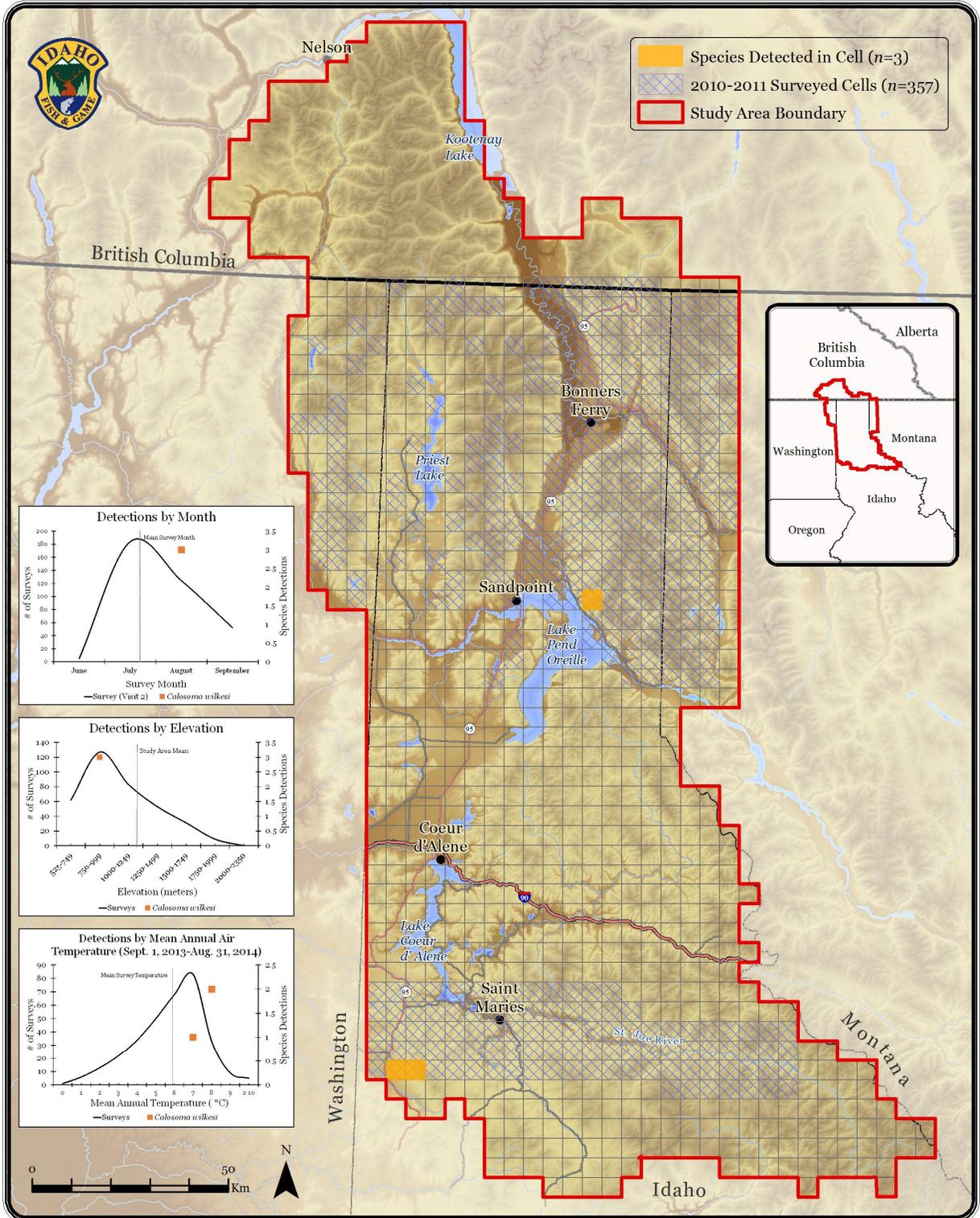
Map 6-7.

Multi-species Baseline Initiative: *Calosoma moniliatum* Detections



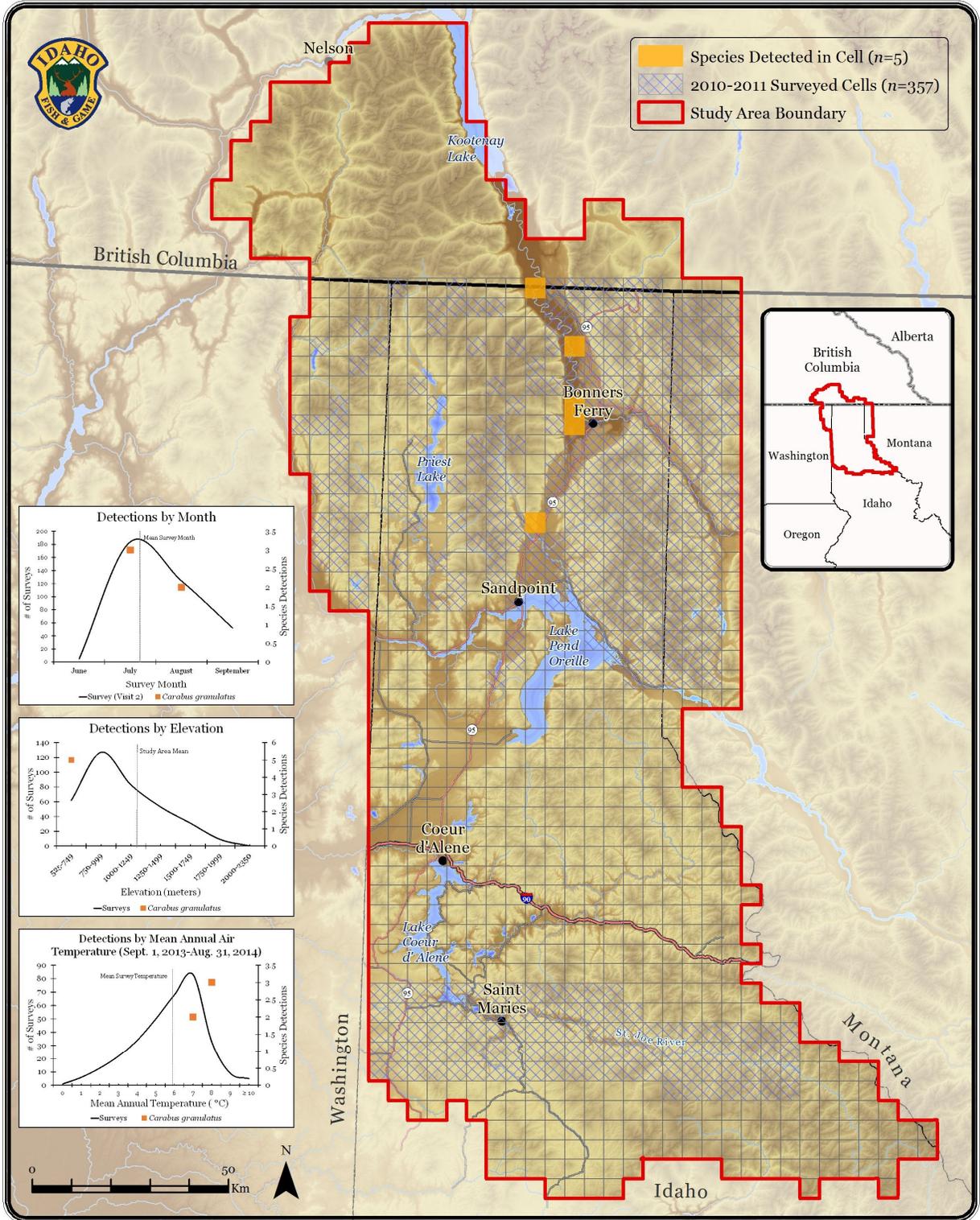
Map 6-8.

Multi-species Baseline Initiative: *Calosoma wilkesi* Detections



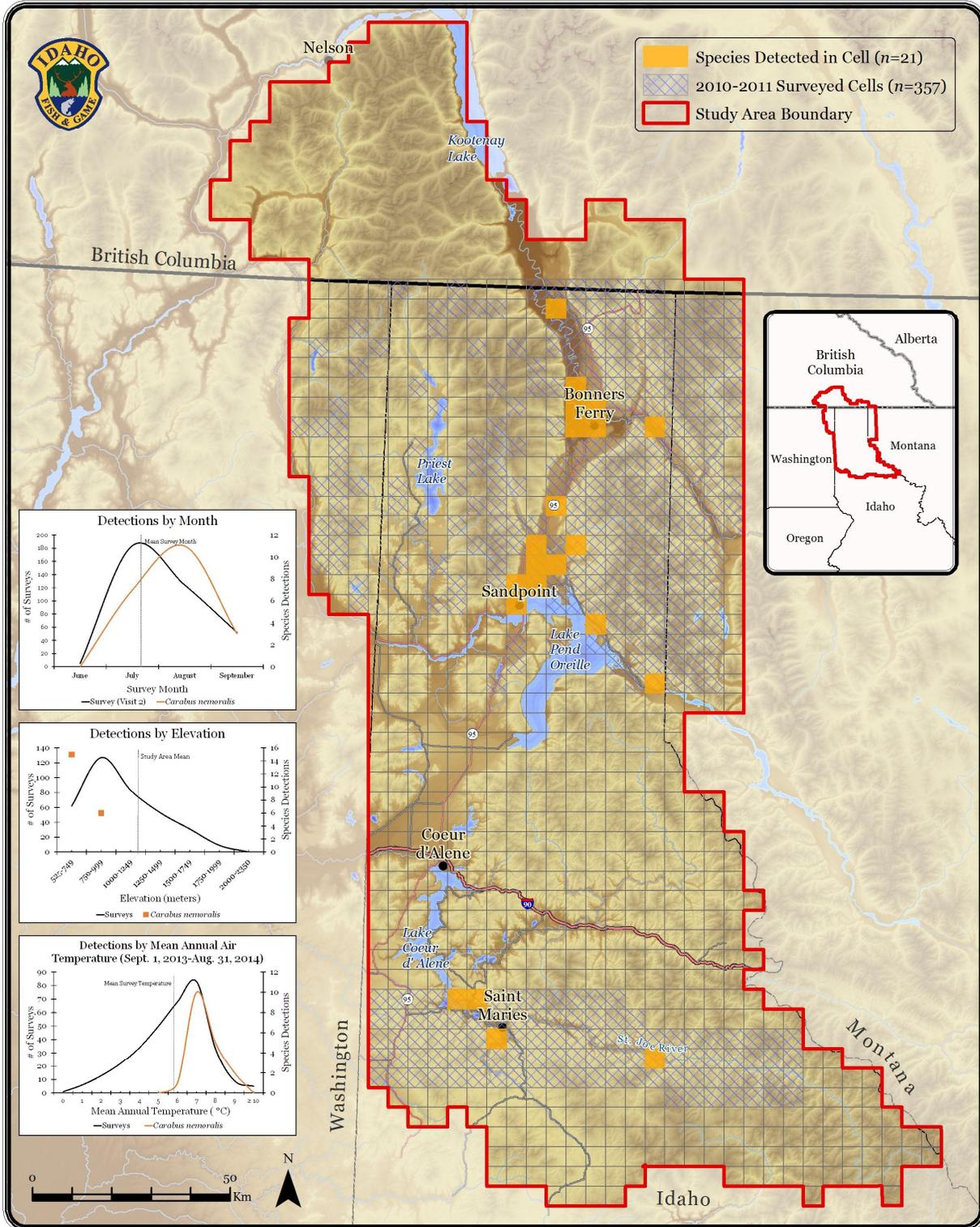
Map 6-9.

Multi-species Baseline Initiative: Granulated Carabid (*Carabus granulatus*) Detections



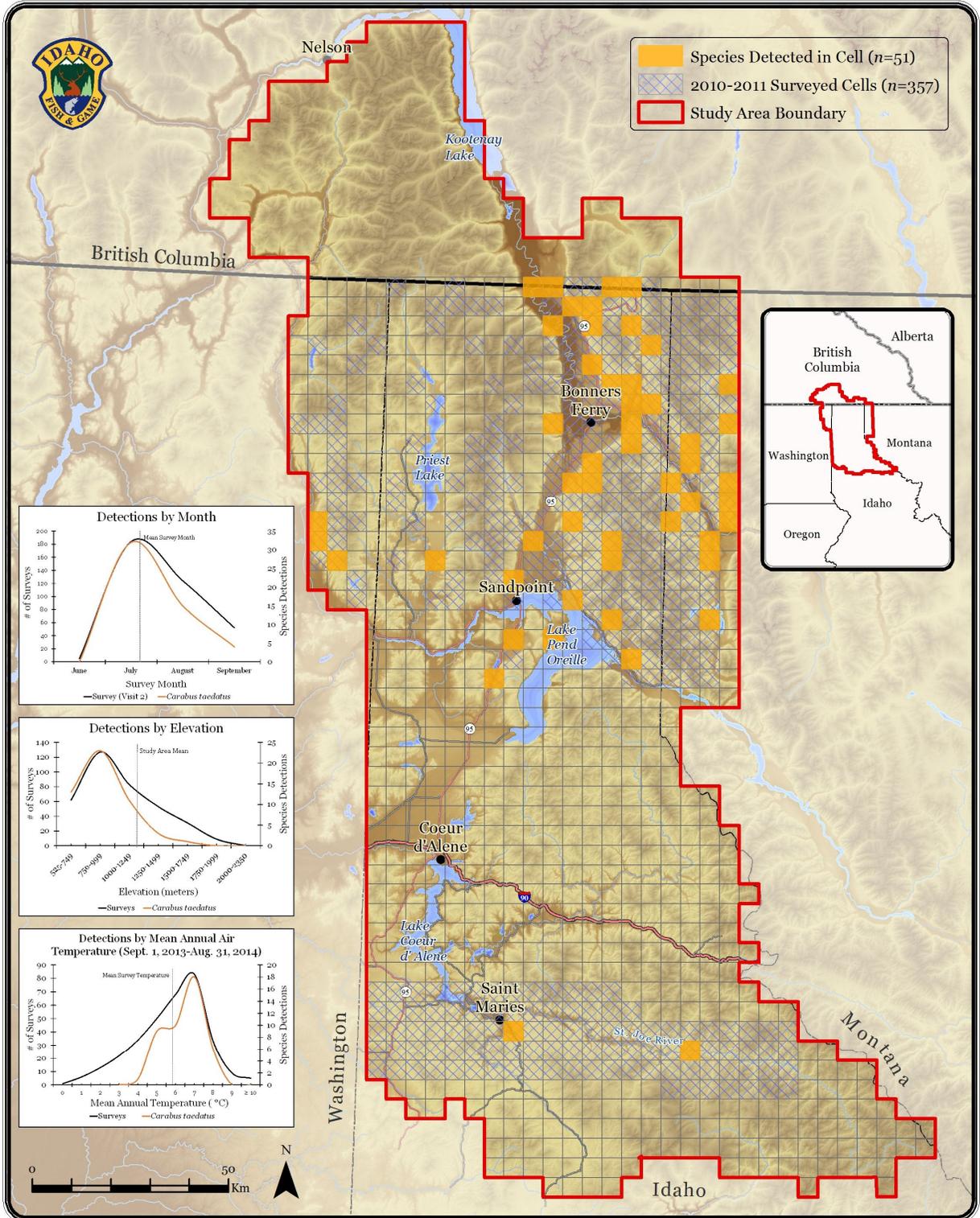
Map 6-10.

Multi-species Baseline Initiative: Bronzed Carabid (*Carabus nemoralis*) Detections



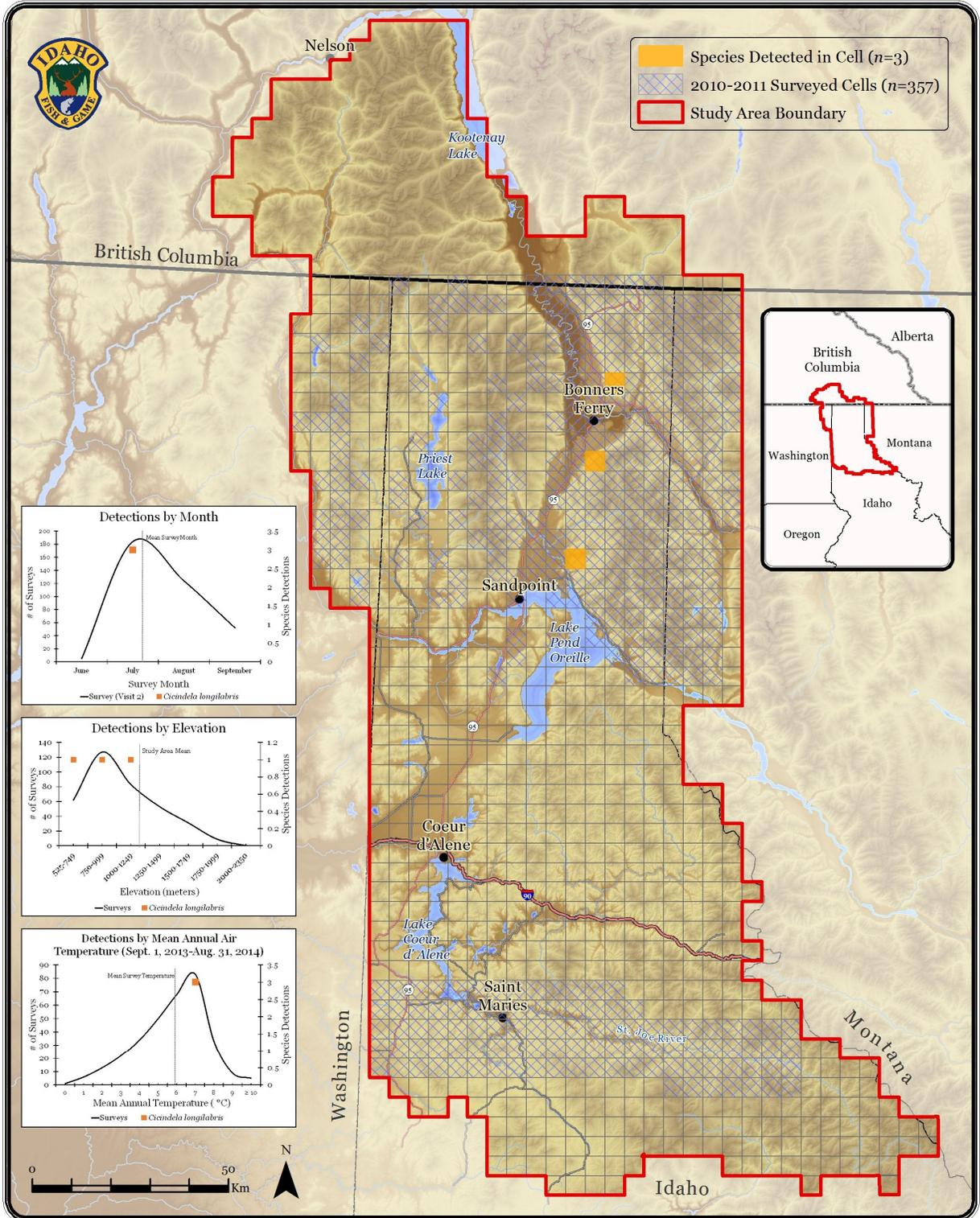
Map 6-11.

Multi-species Baseline Initiative: *Carabus taedatus* Detections



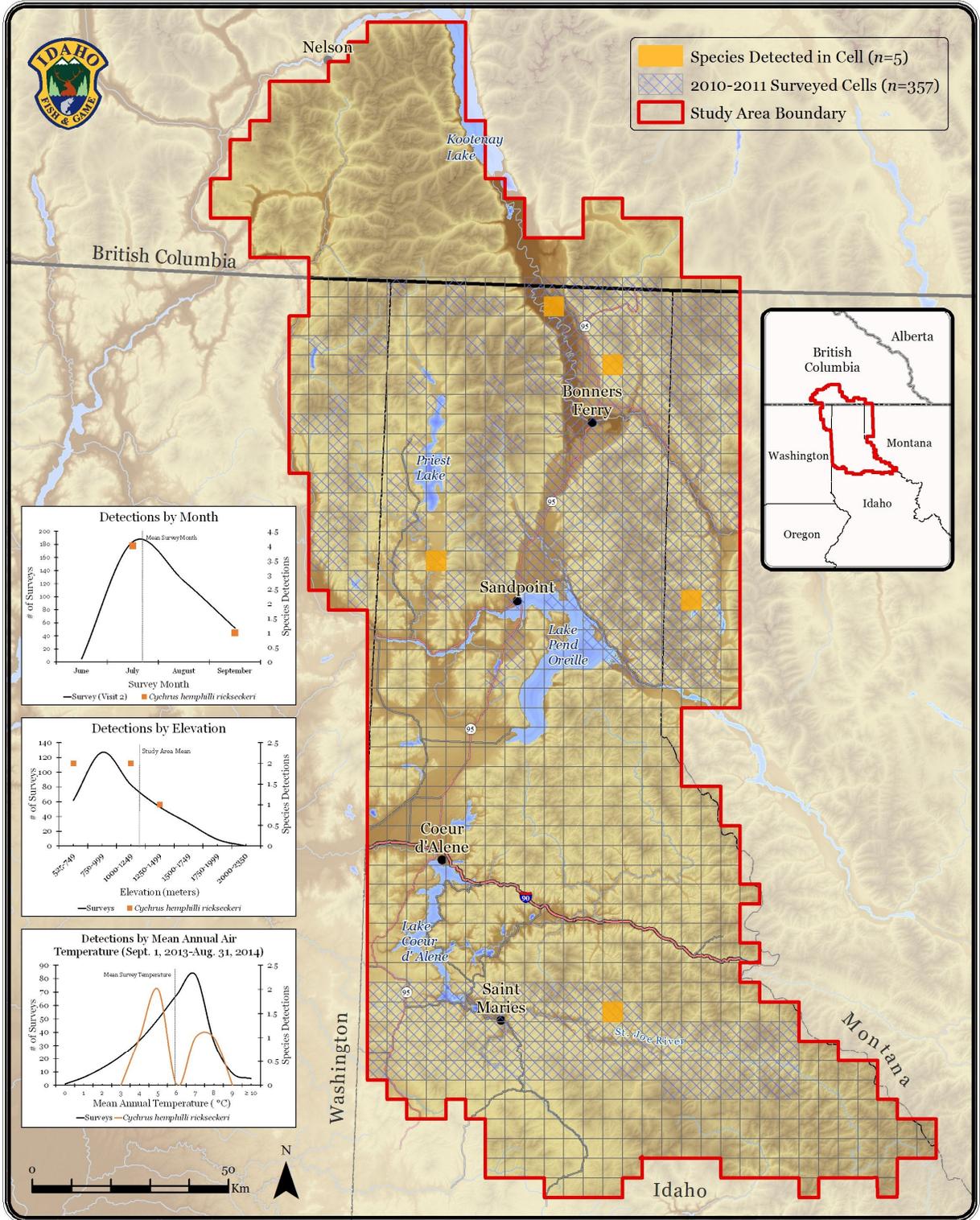
Map 6-12.

Multi-species Baseline Initiative: Boreal Long-lipped Tiger Beetle (*Cicindela longilabris*) Detections



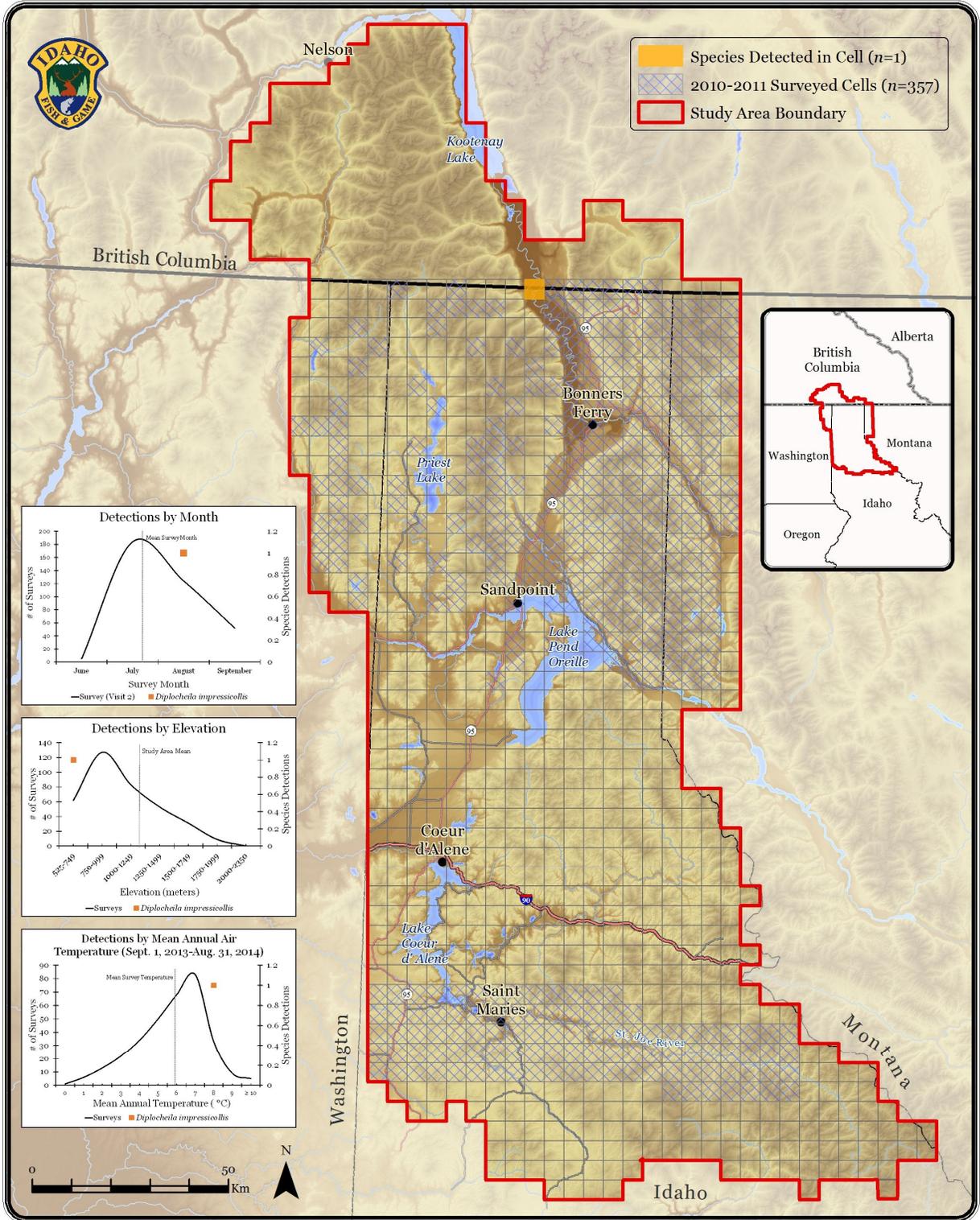
Map 6-13.

Multi-species Baseline Initiative: *Cyclus hemphilli rickseckeri* Detections



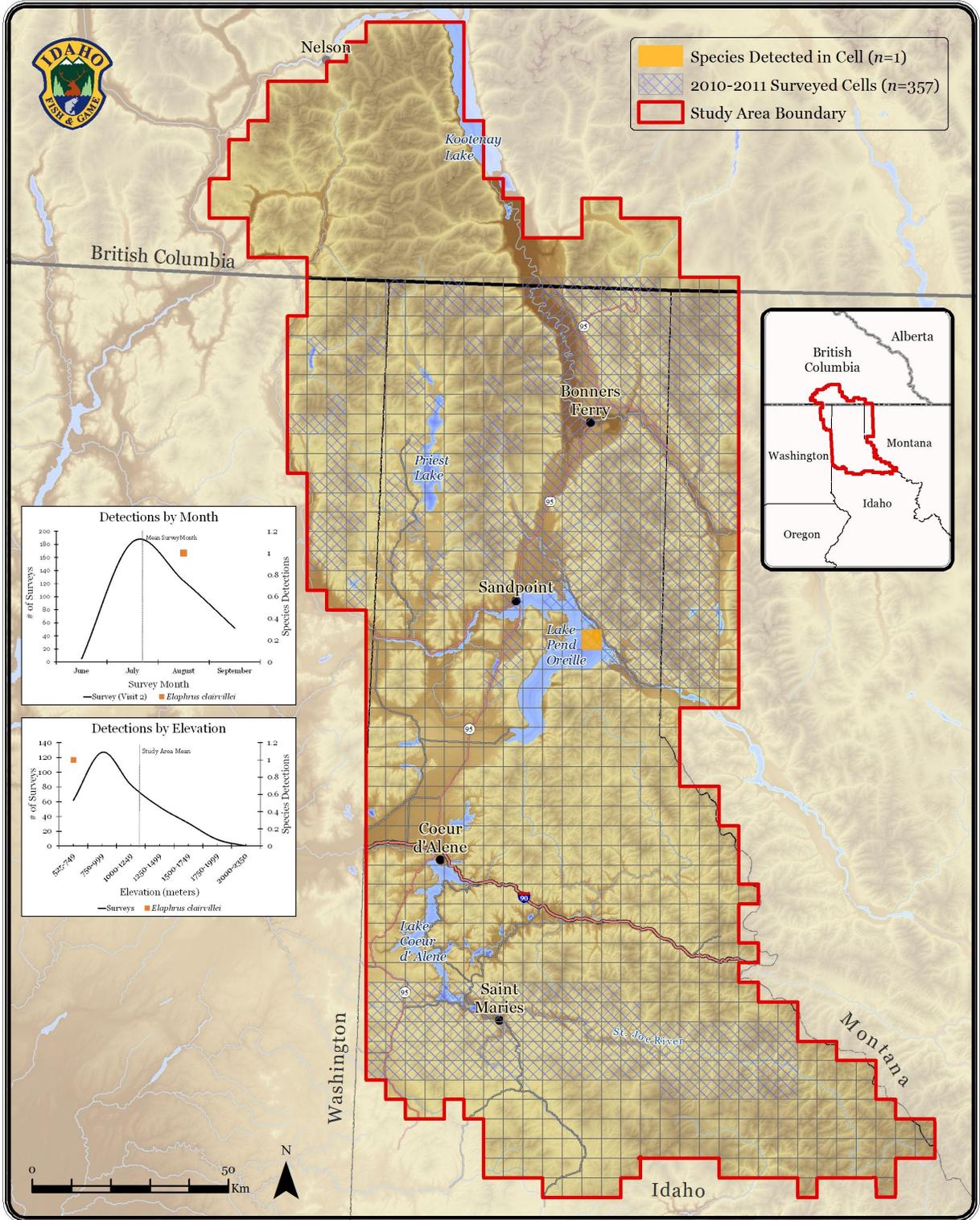
Map 6-14.

Multi-species Baseline Initiative: *Diplocheila impressicollis* Detections



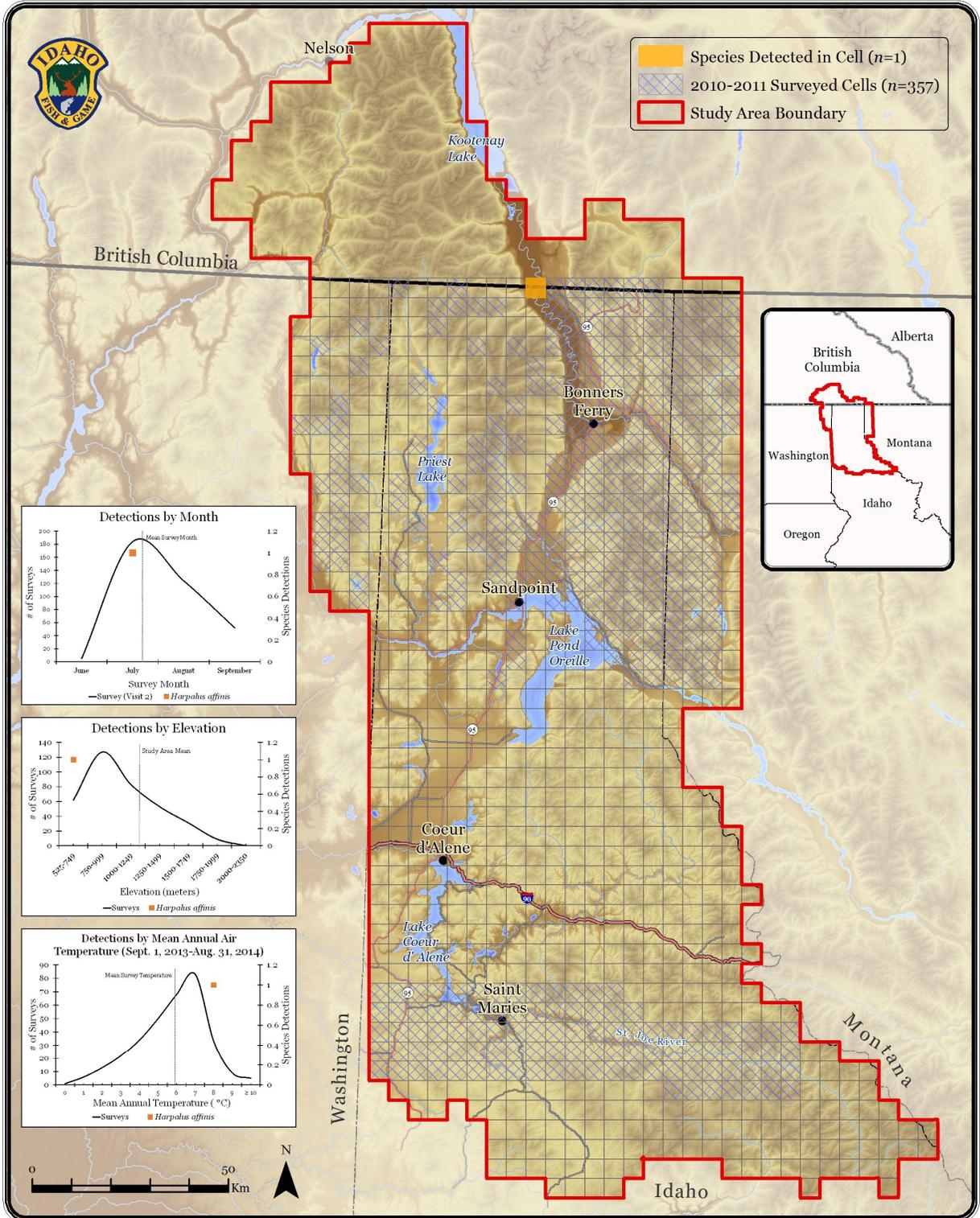
Map 6-15.

Multi-species Baseline Initiative: *Elaphrus clairvillei* Detections



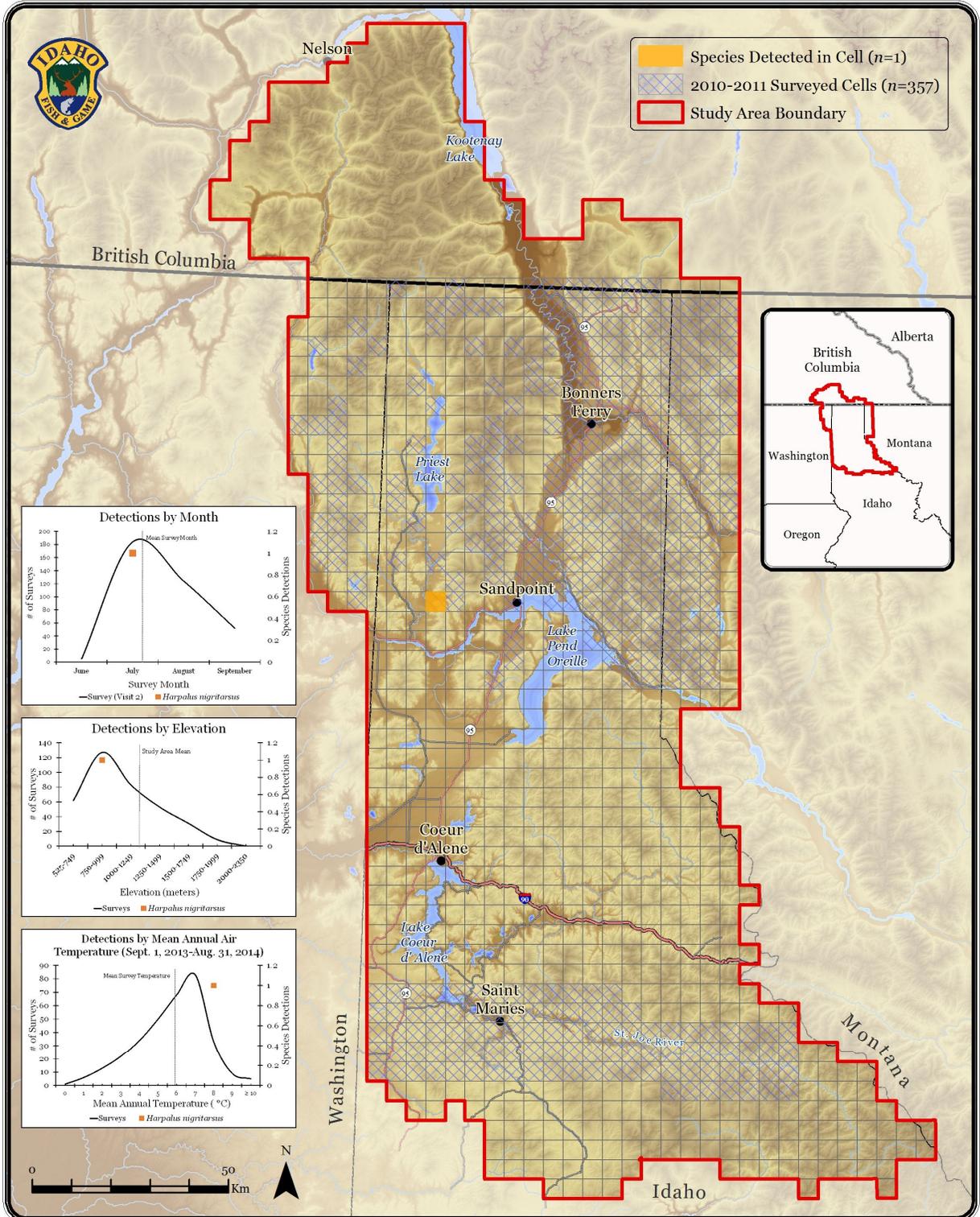
Map 6-16.

Multi-species Baseline Initiative: *Harpalus affinis* Detections



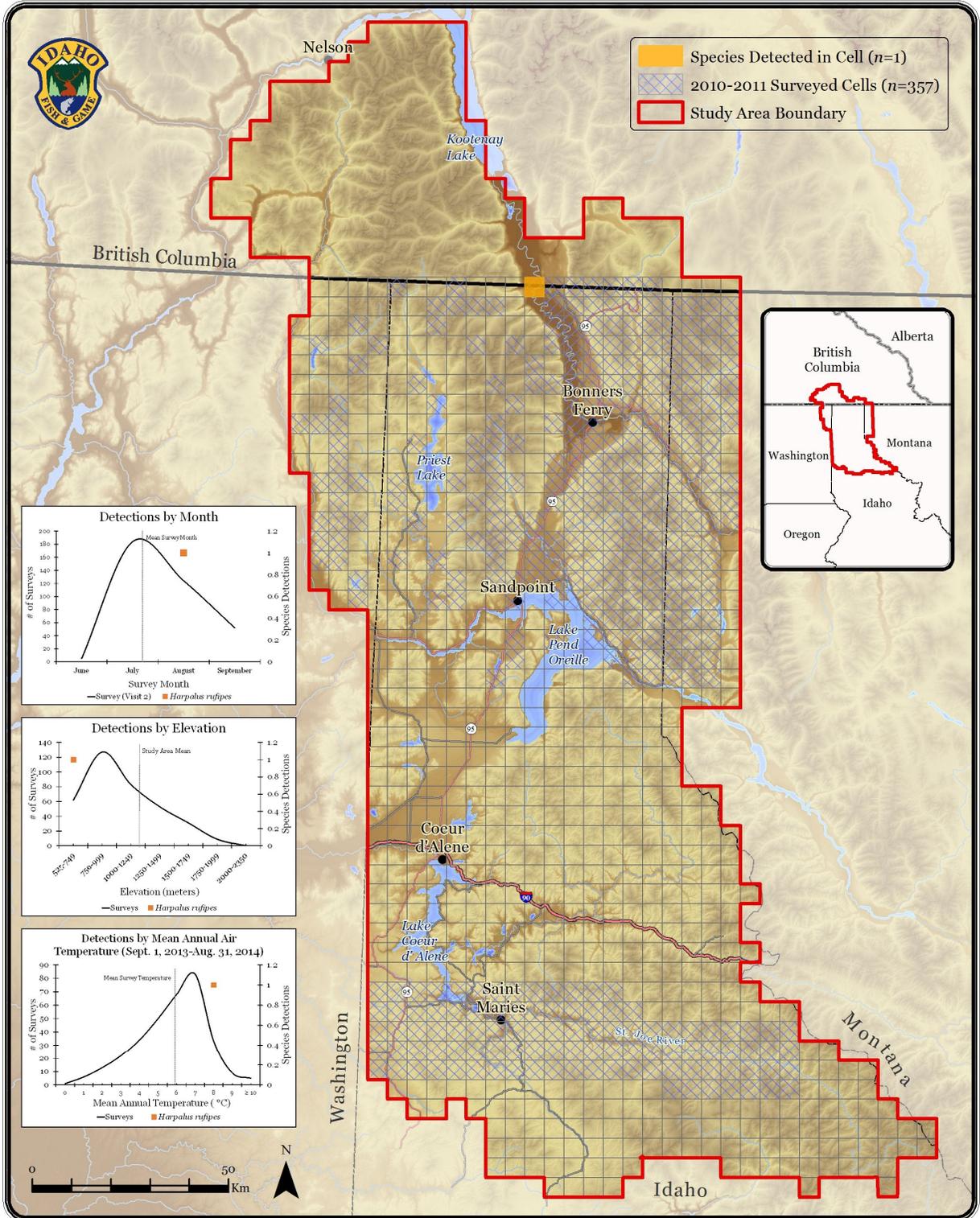
Map 6-17.

Multi-species Baseline Initiative: *Harpalus nigratarsus* Detections



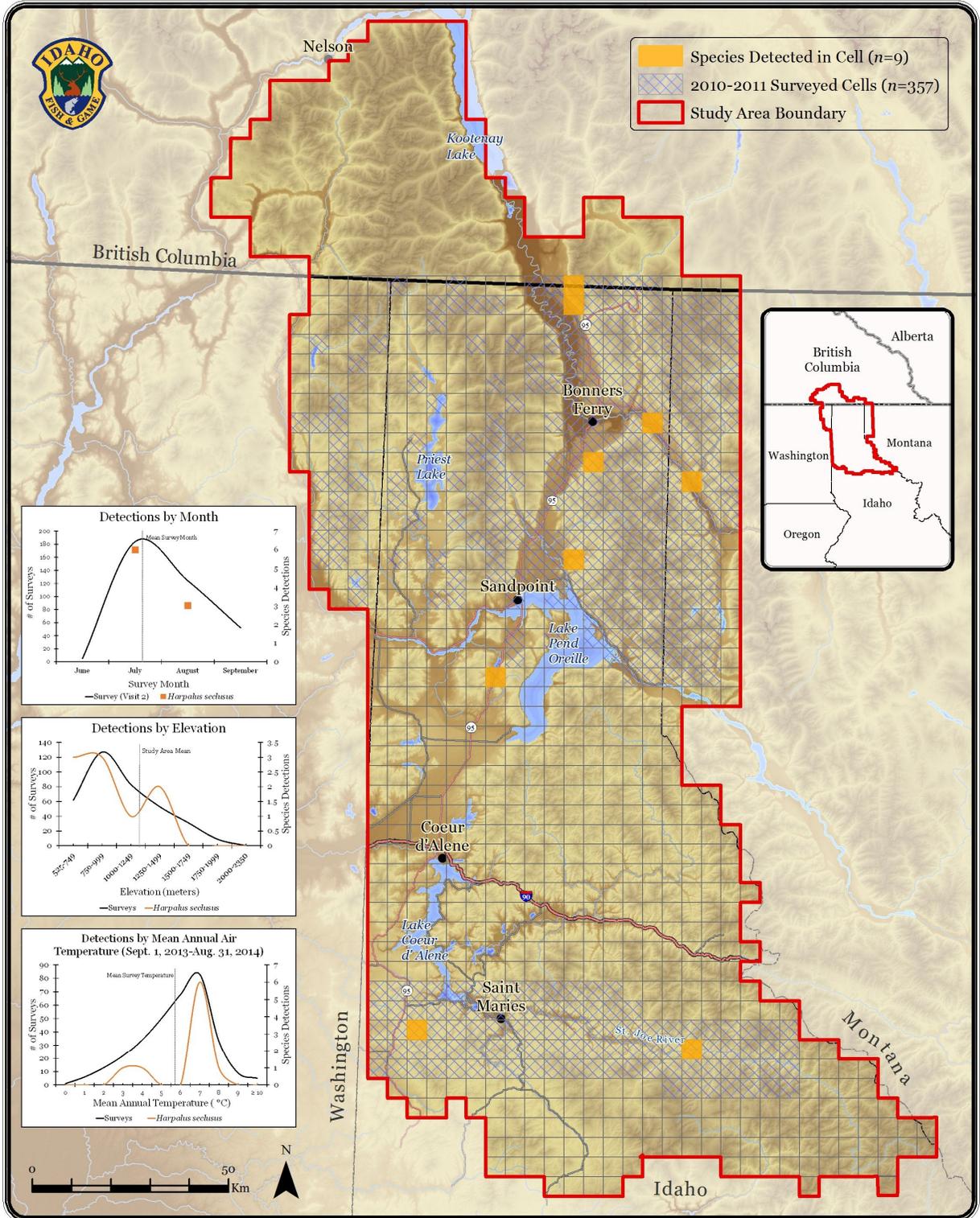
Map 6-18.

Multi-species Baseline Initiative: *Harpalus rufipes* Detections



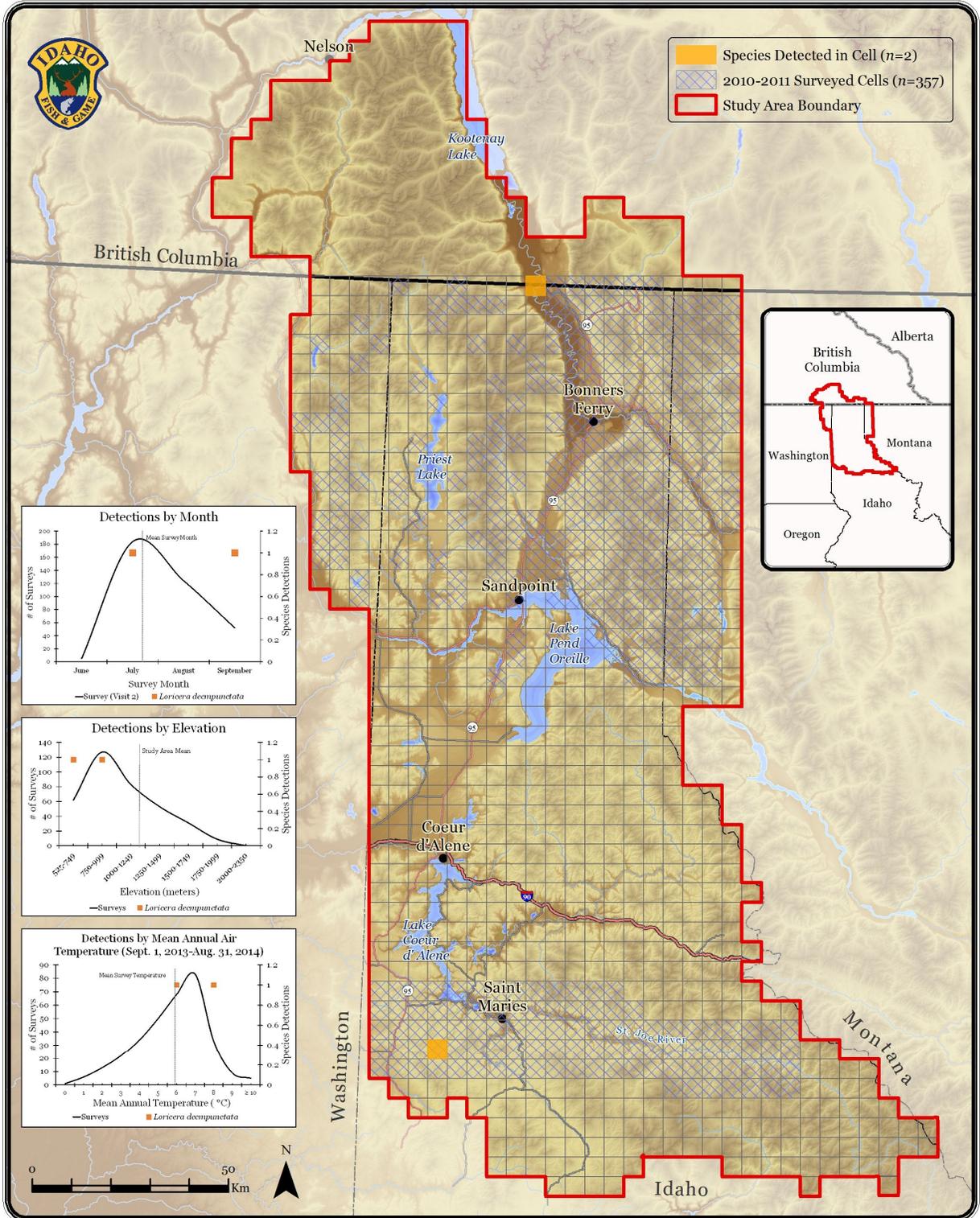
Map 6-19.

Multi-species Baseline Initiative: *Harpalus seclusus* Detections



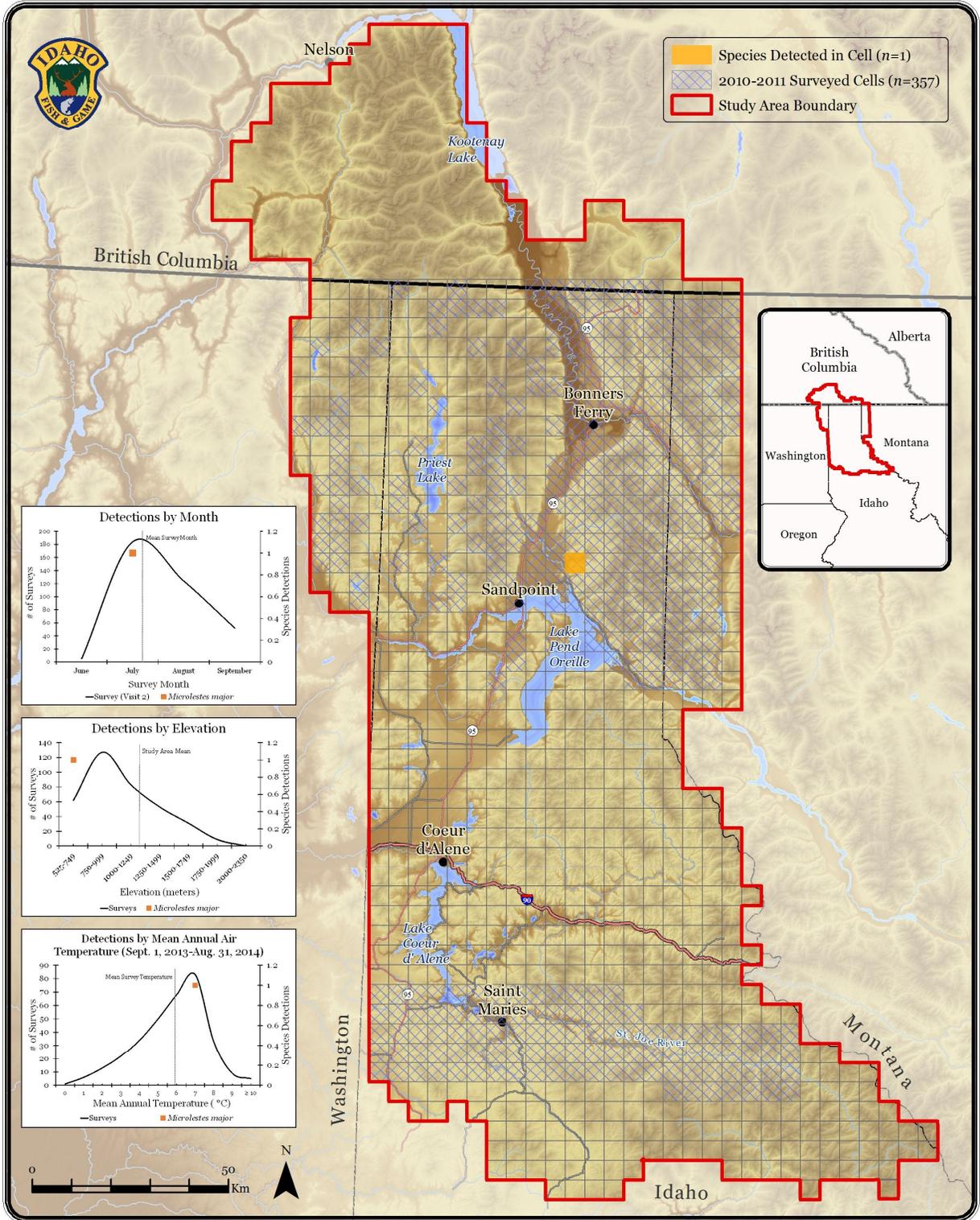
Map 6-20.

Multi-species Baseline Initiative: (*Loricera decempunctata*) Detections



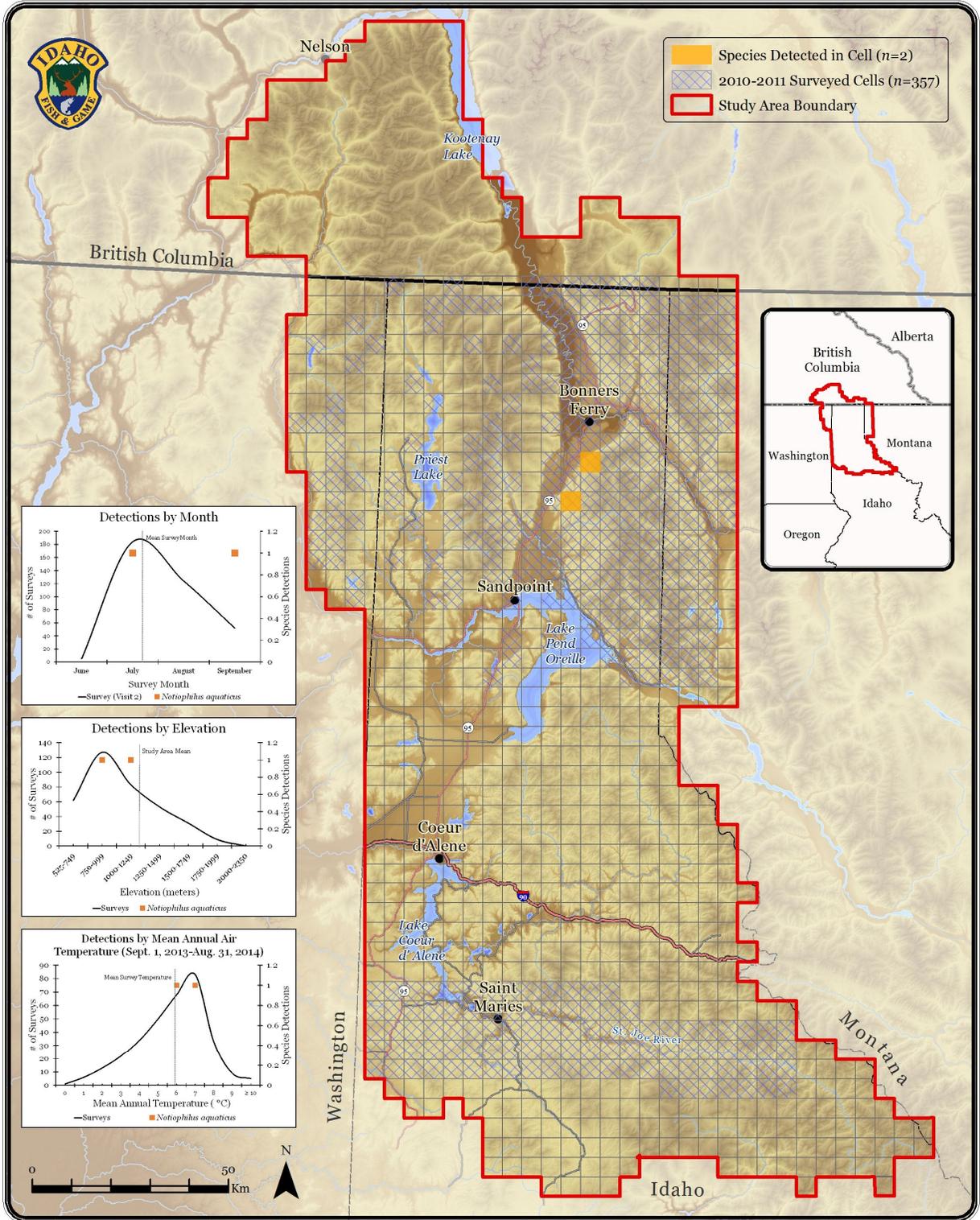
Map 6-21.

Multi-species Baseline Initiative: *Microlestes major* Detections



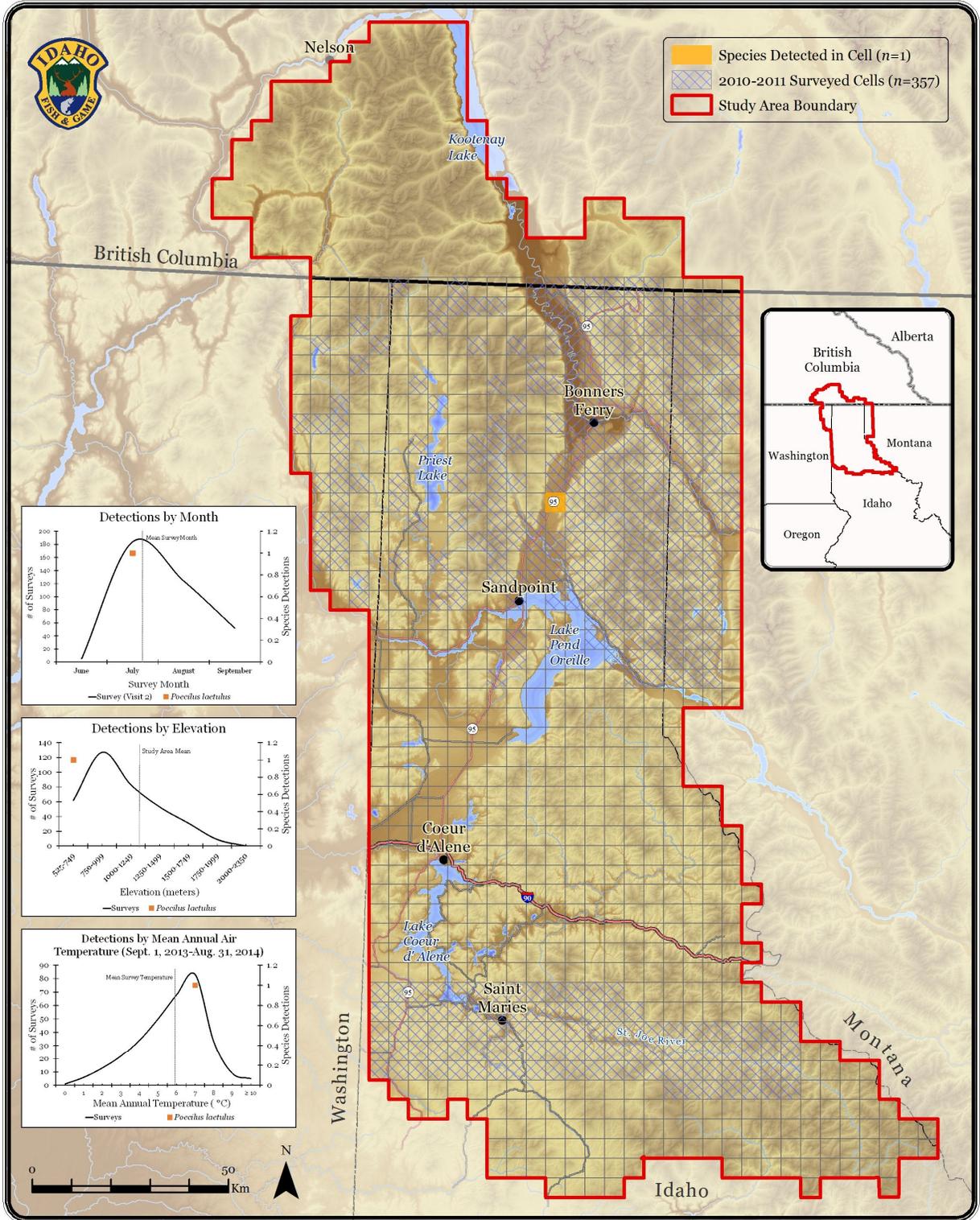
Map 6-22.

Multi-species Baseline Initiative: *Notiphilus aquaticus* Detections



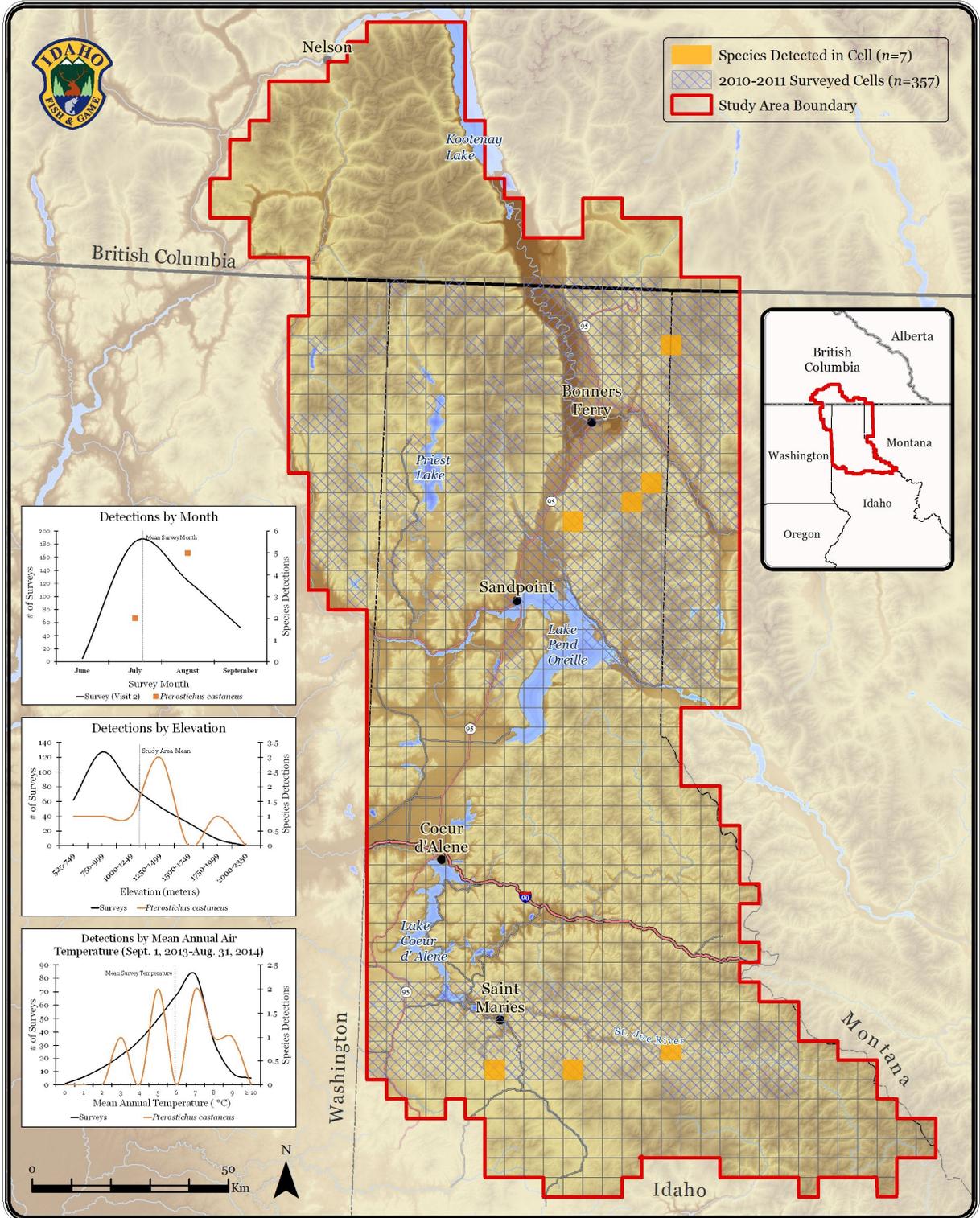
Map 6-23.

Multi-species Baseline Initiative: *Poecilus laetulus* Detections



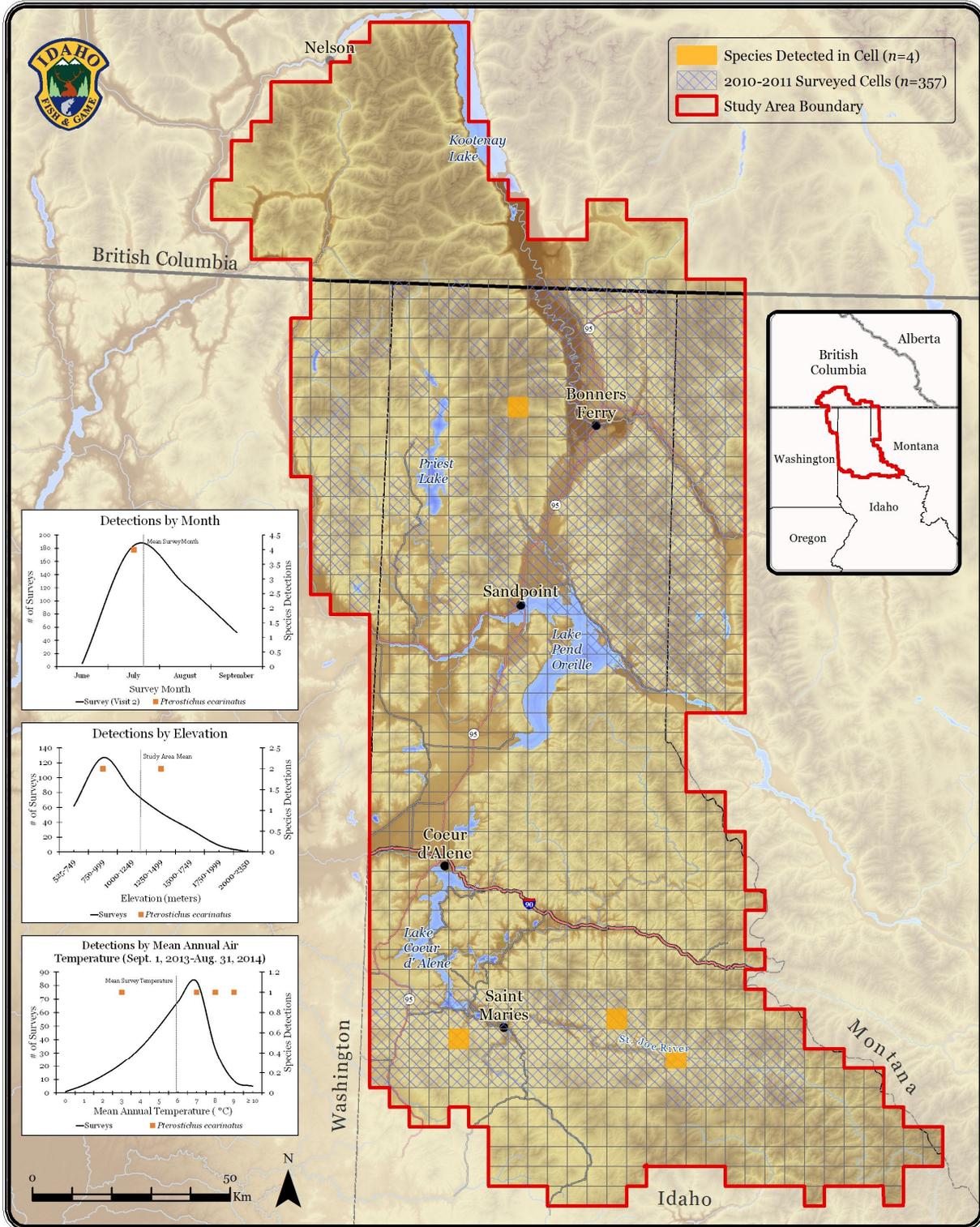
Map 6-24.

Multi-species Baseline Initiative: *Pterostichus castaneus* Detections



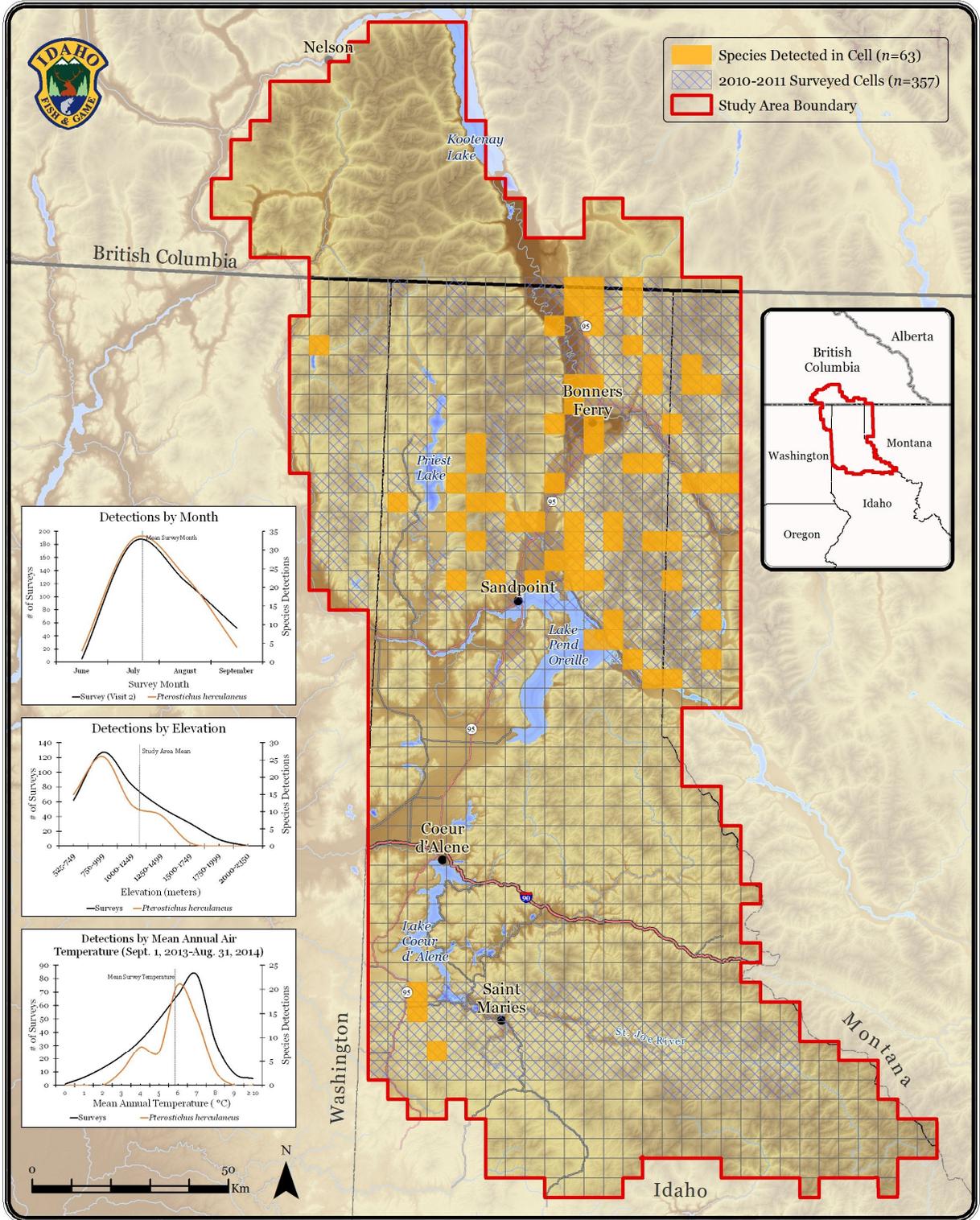
Map 6-25.

Multi-species Baseline Initiative: *Pterostichus ecarinatus* Detections



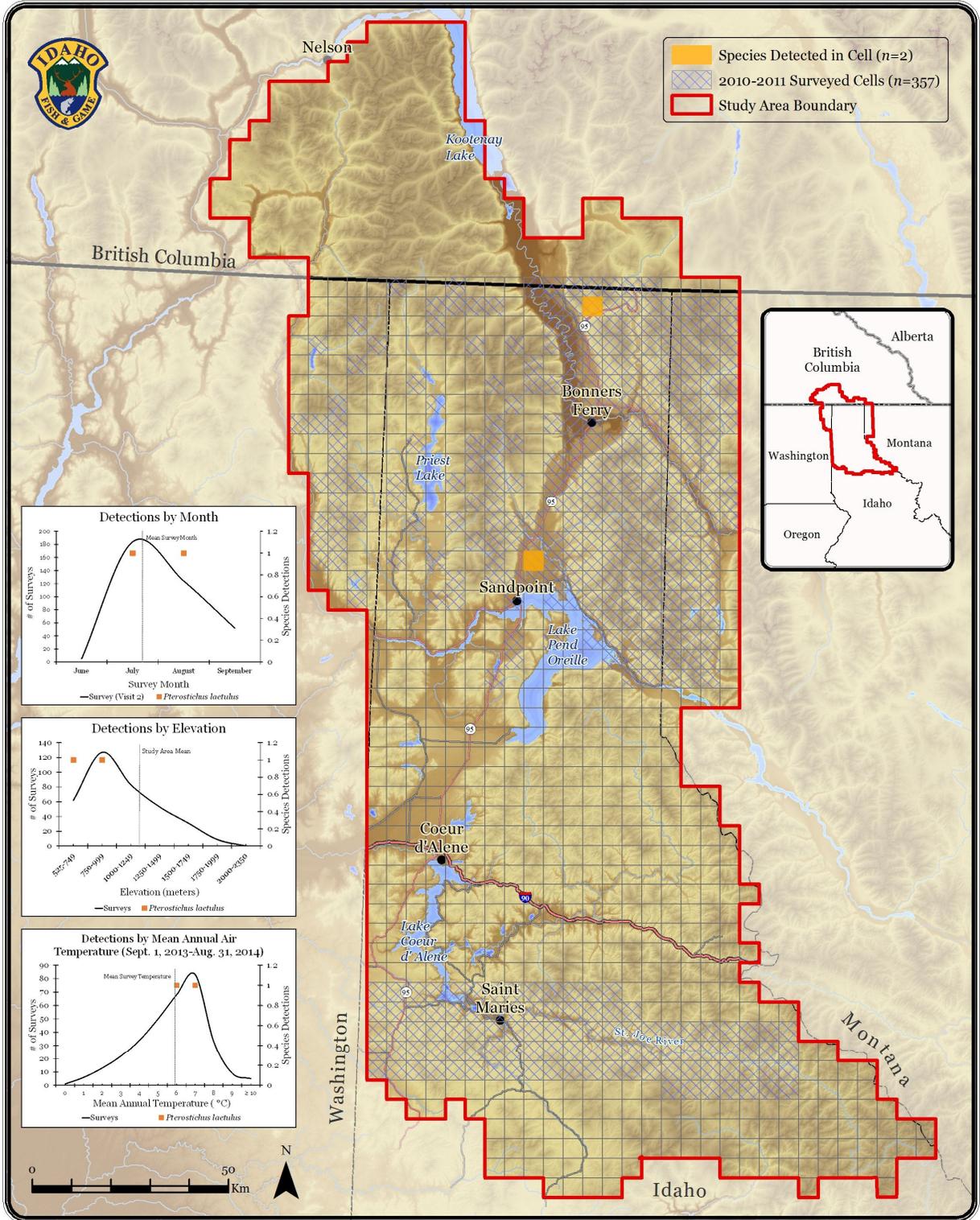
Map 6-26.

Multi-species Baseline Initiative: *Pterostichus herculeanus* Detections



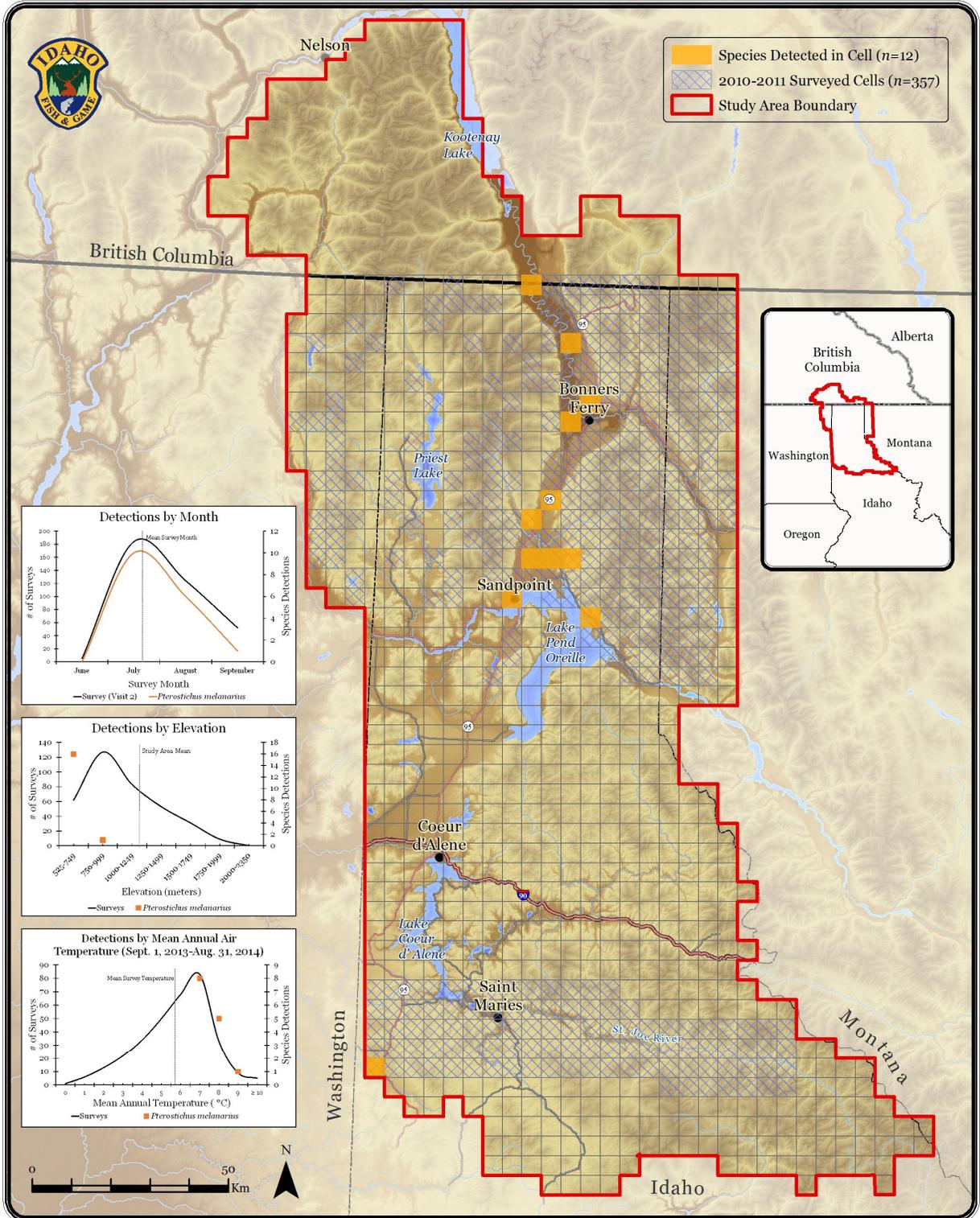
Map 6-27.

Multi-species Baseline Initiative: *Pterostichus laetulus* Detections



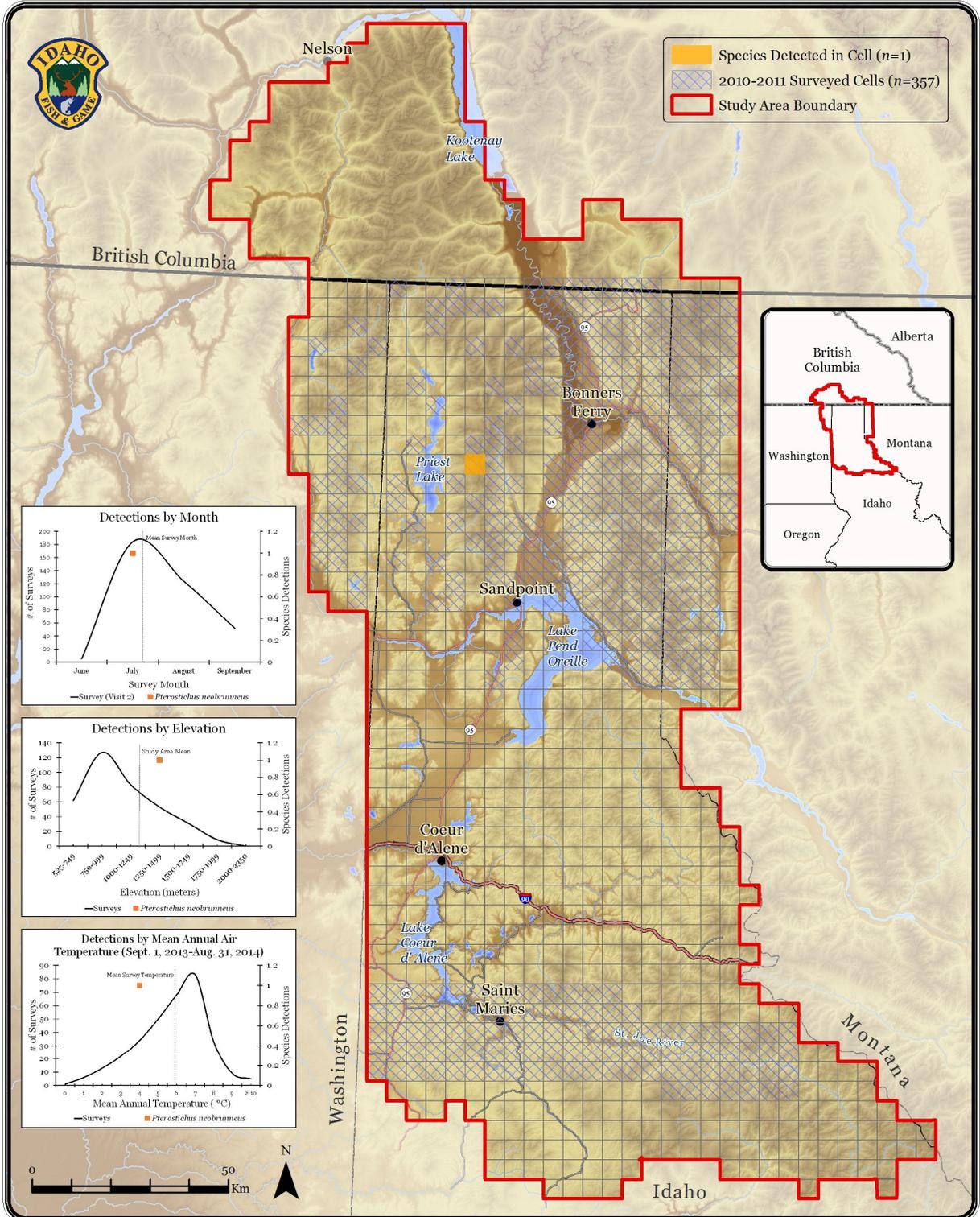
Map 6-28.

Multi-species Baseline Initiative: *Pterostichus melanarius* Detections



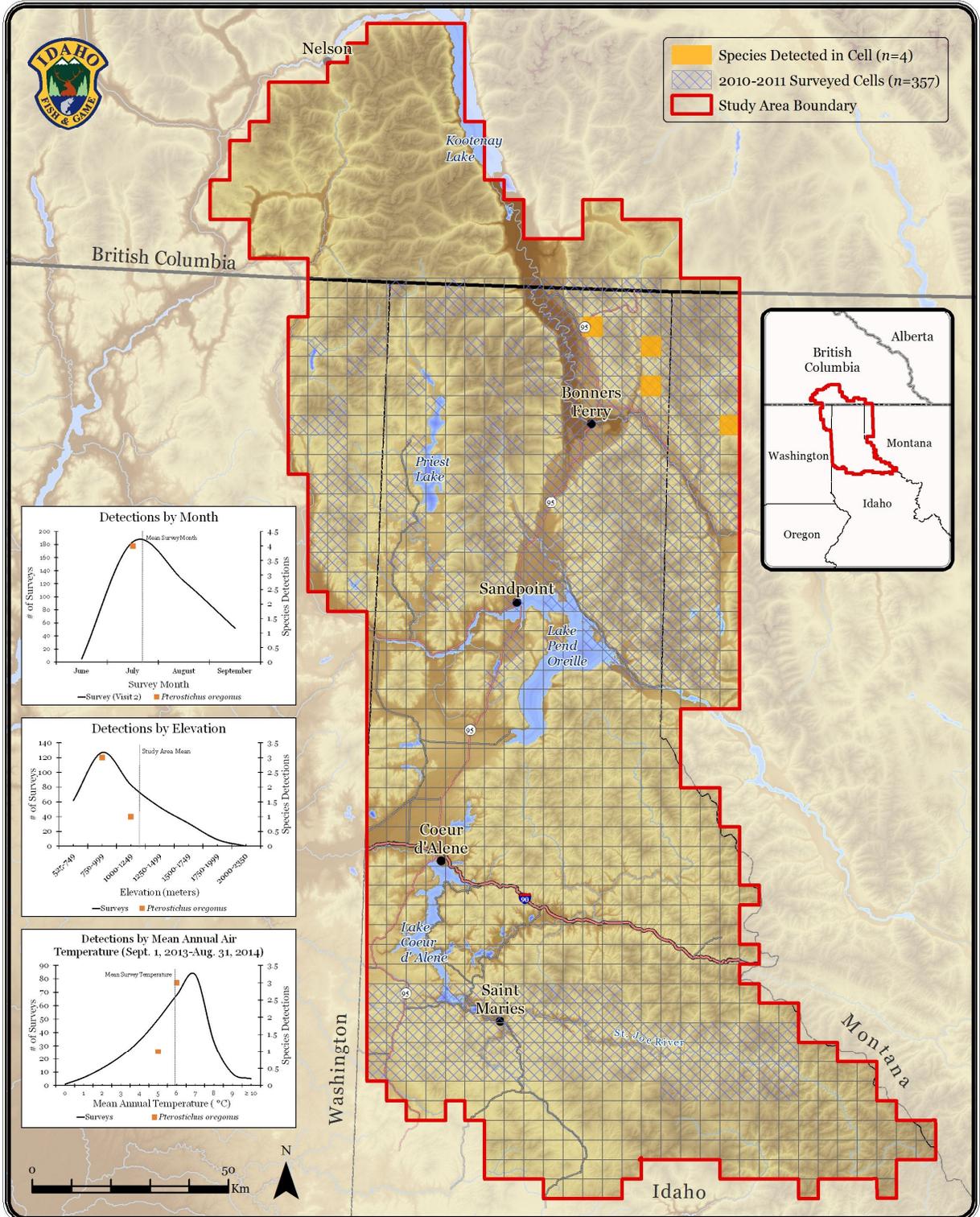
Map 6-29.

Multi-species Baseline Initiative: *Pterostichus neobrunneus* Detections



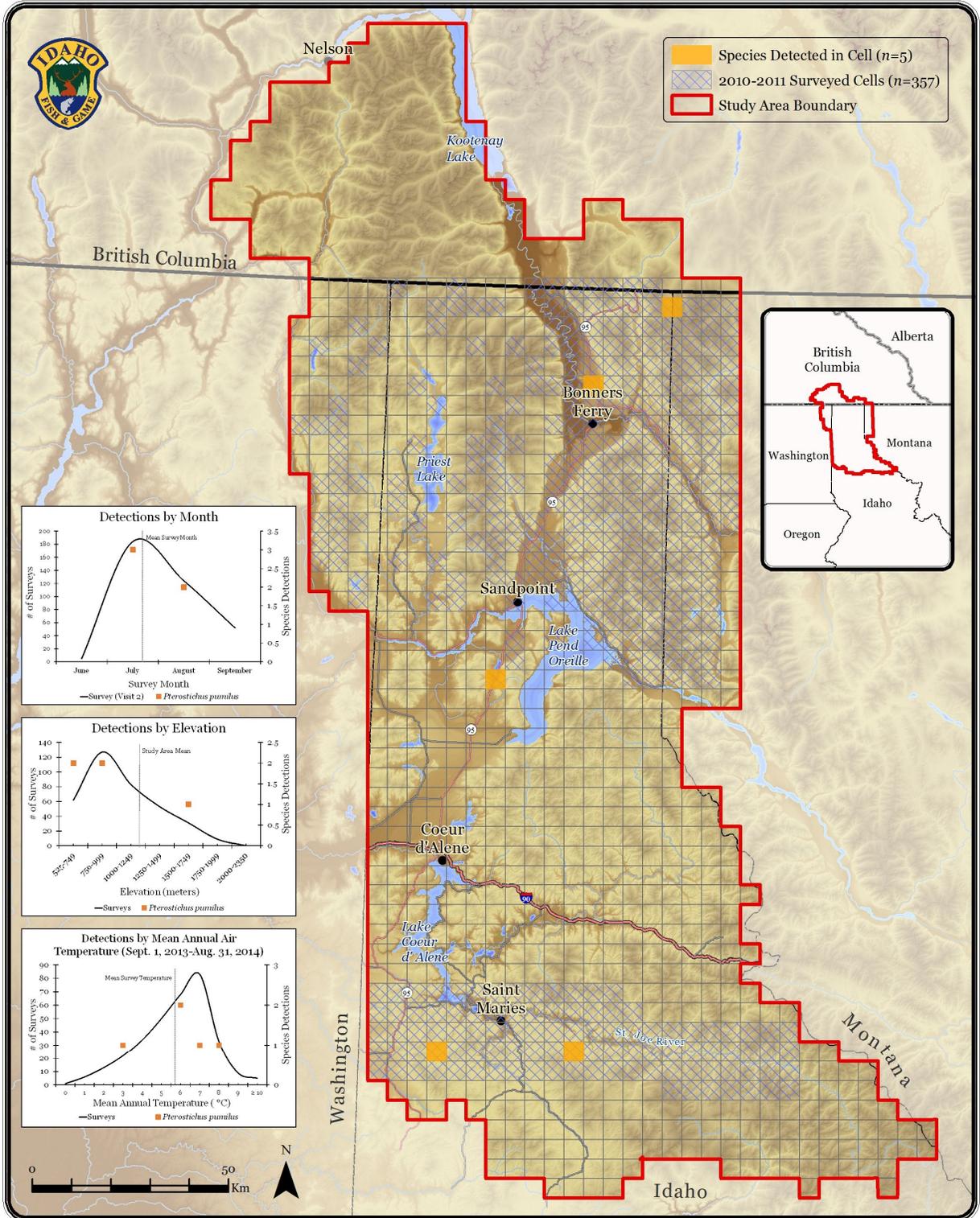
Map 6-30.

Multi-species Baseline Initiative: *Pterostichus oregonus* Detections



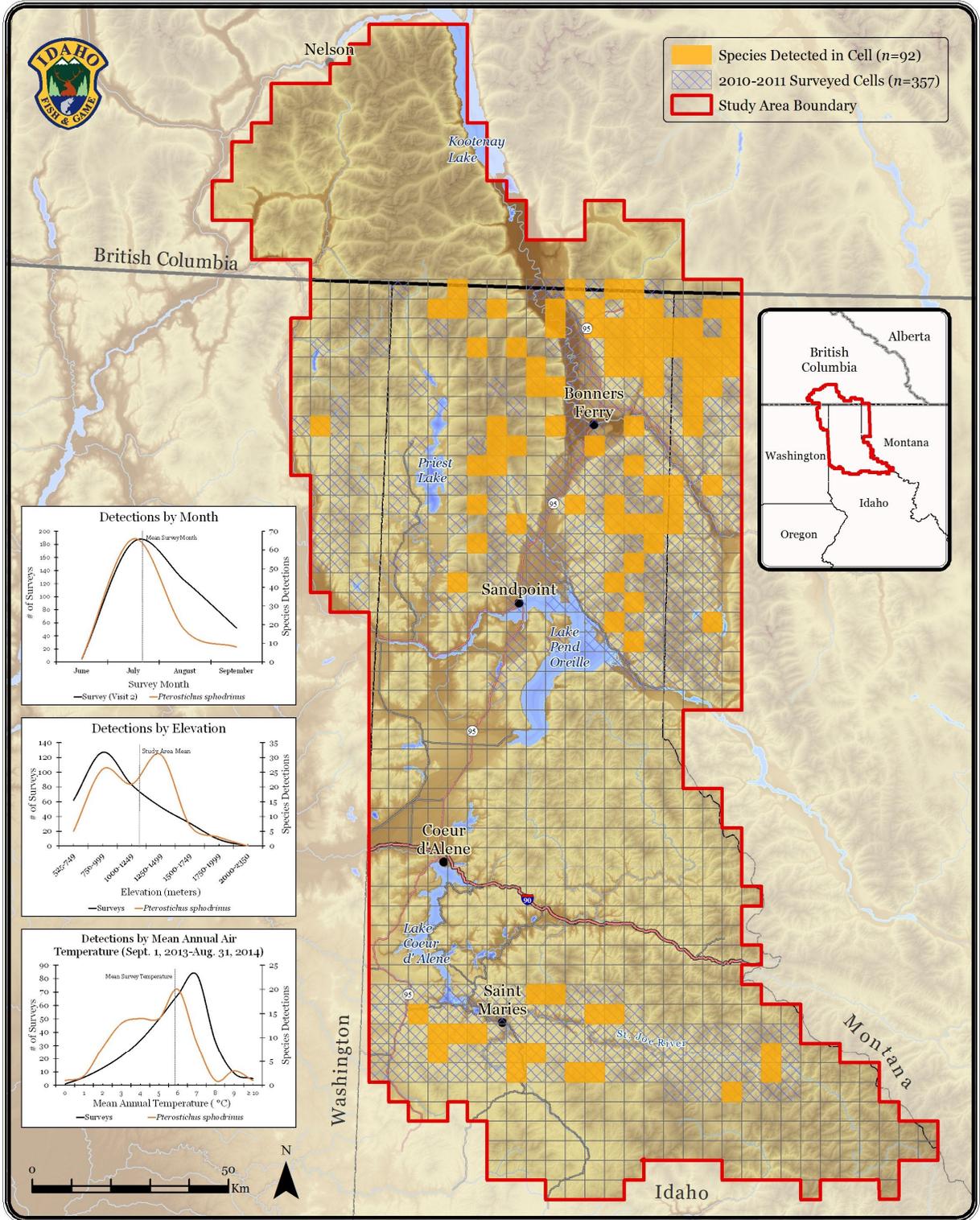
Map 6-31.

Multi-species Baseline Initiative: *Pterostichus pumilus* Detections



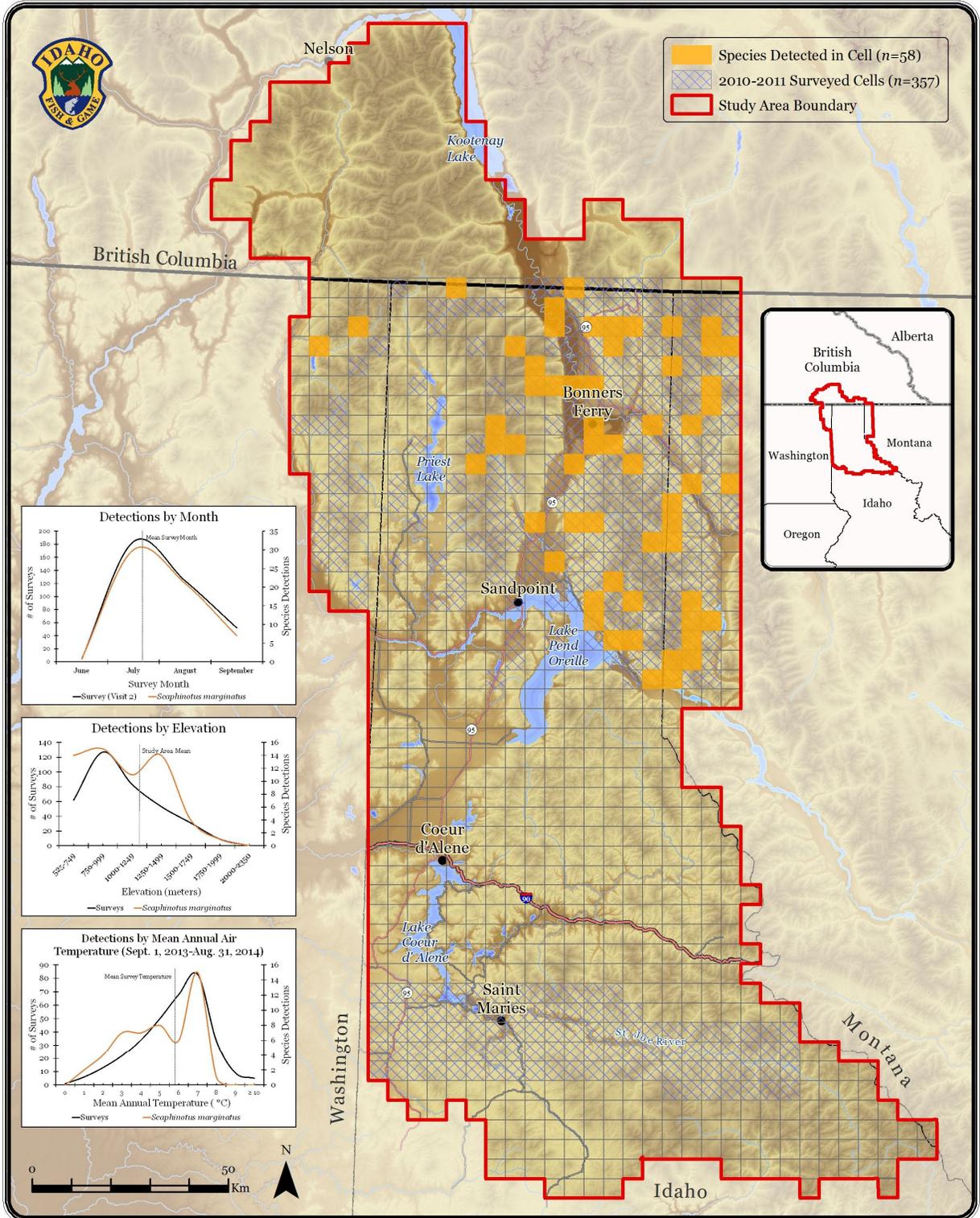
Map 6-32.

Multi-species Baseline Initiative: *Pterostichus sphodrinus* Detections



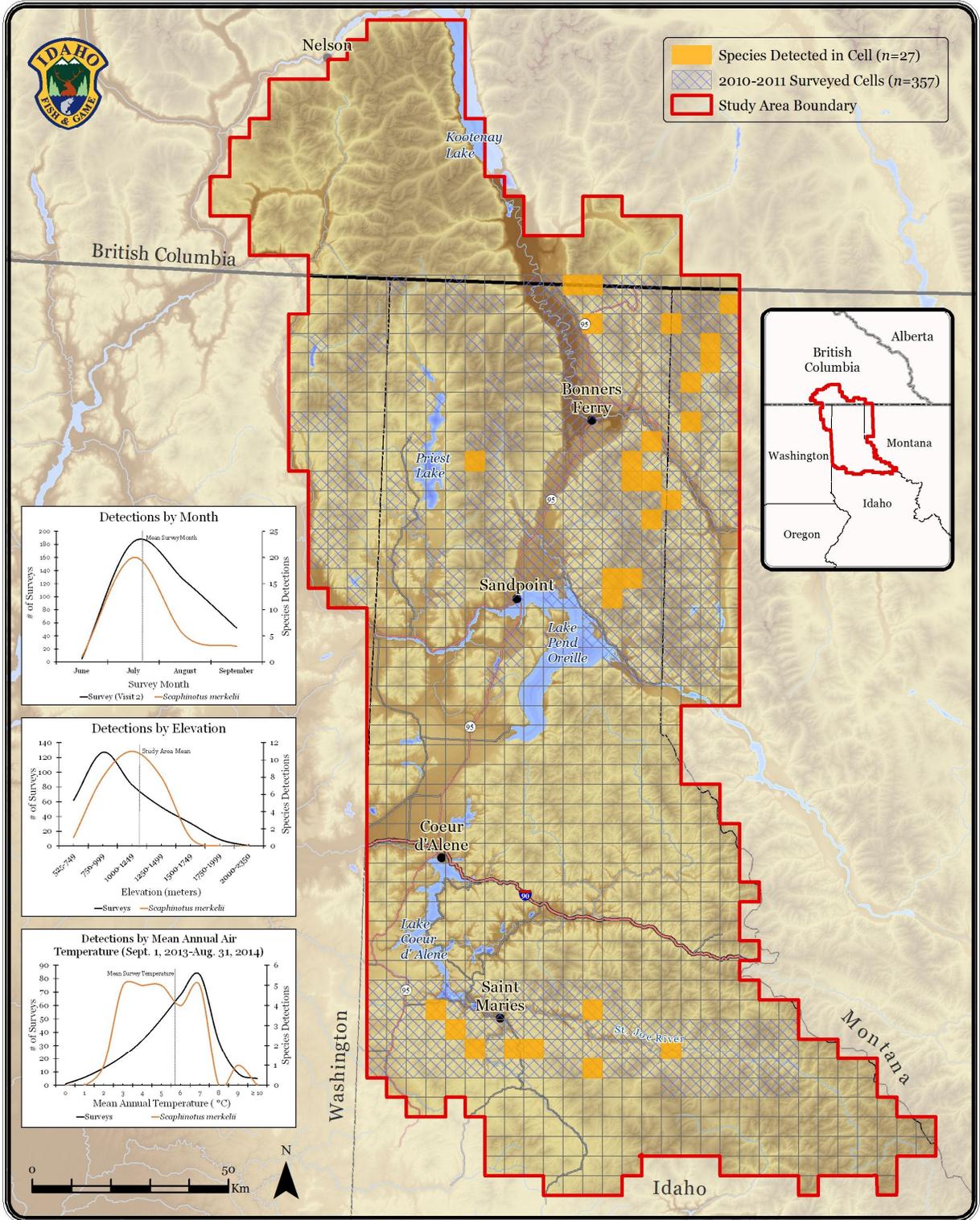
Map 6-33.

Multi-species Baseline Initiative: *Scaphinotus marginatus* Detections



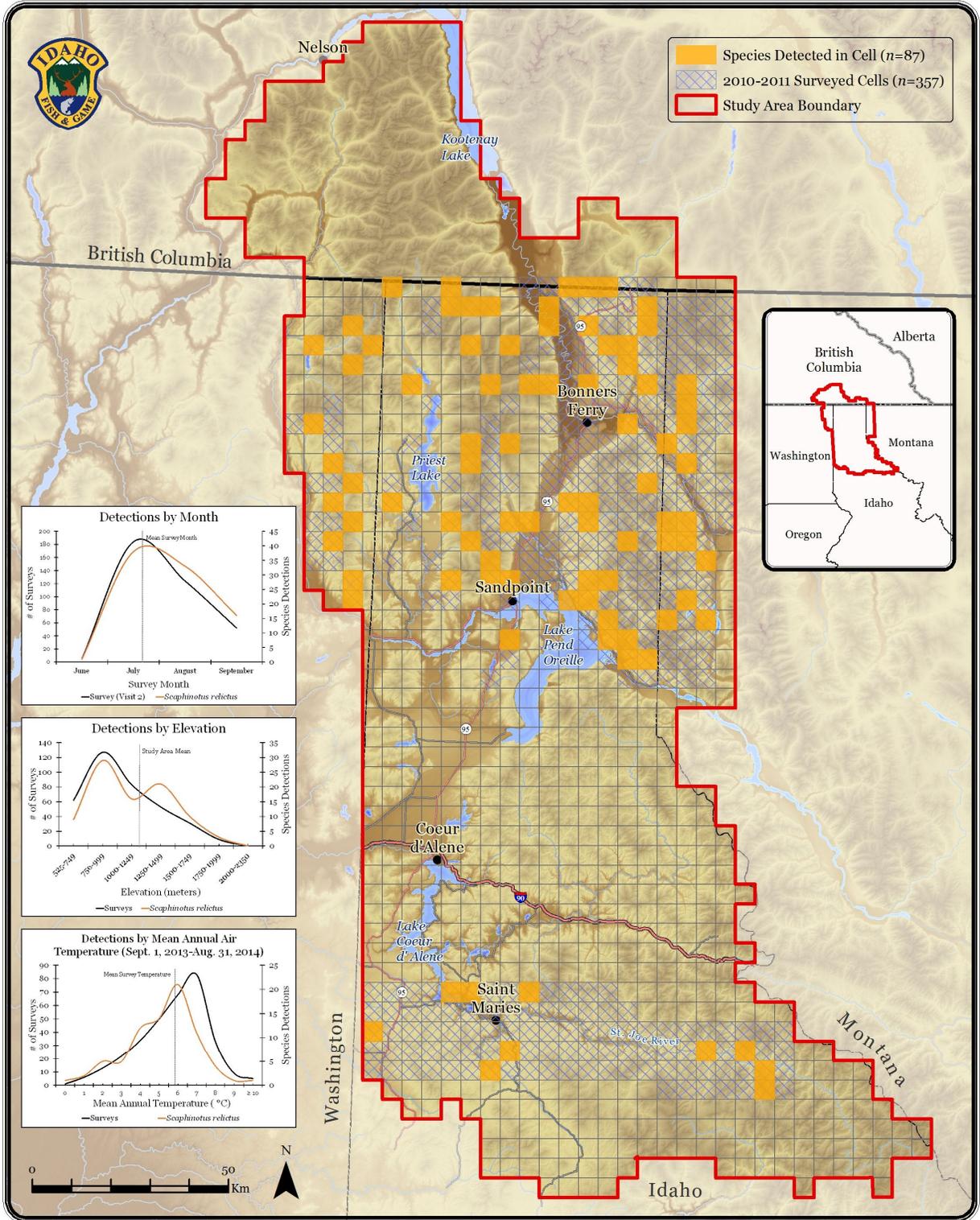
Map 6-34.

Multi-species Baseline Initiative: *Scaphinotus merkelii* Detections



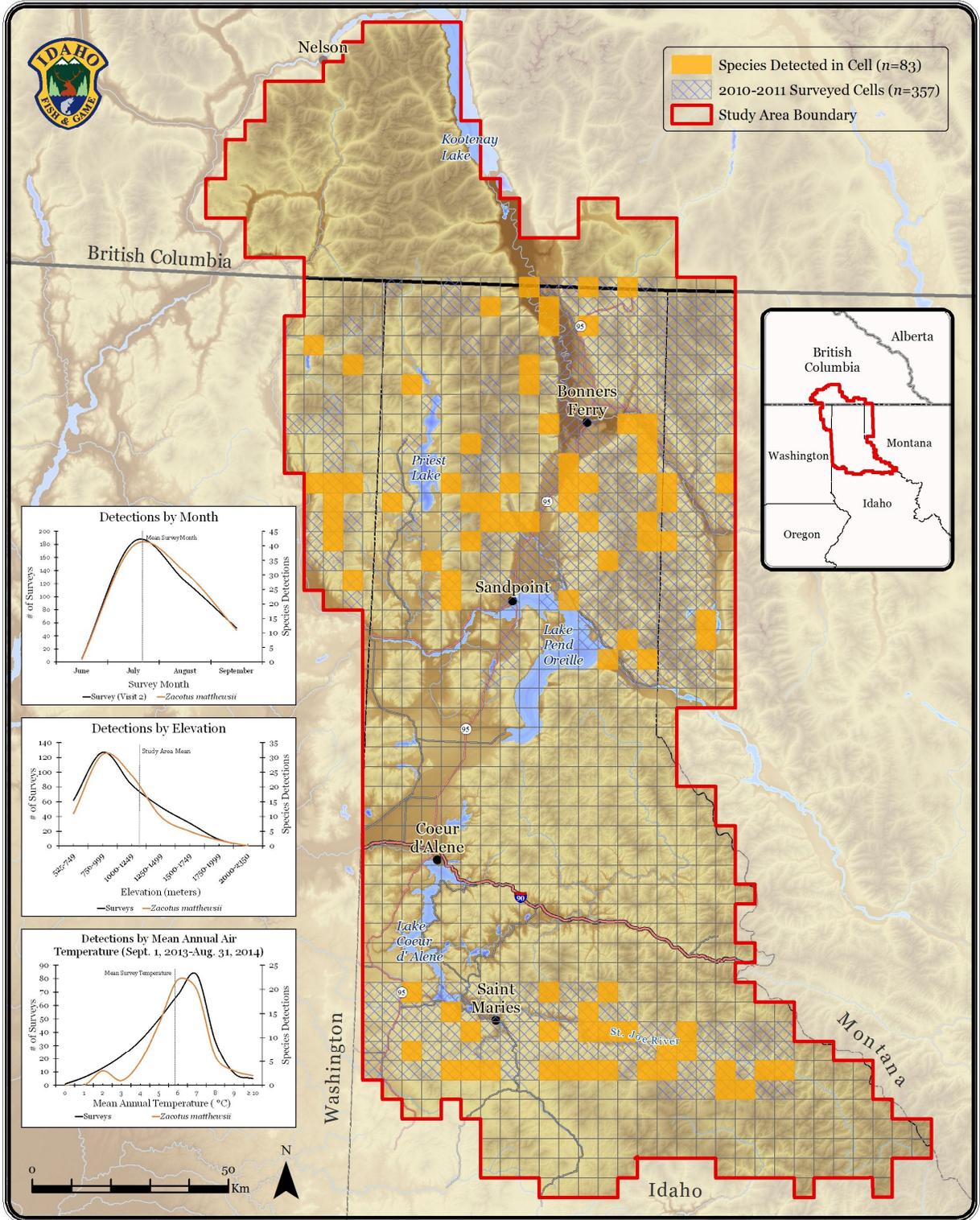
Map 6-35.

Multi-species Baseline Initiative: *Scaphinotus relictus* Detections



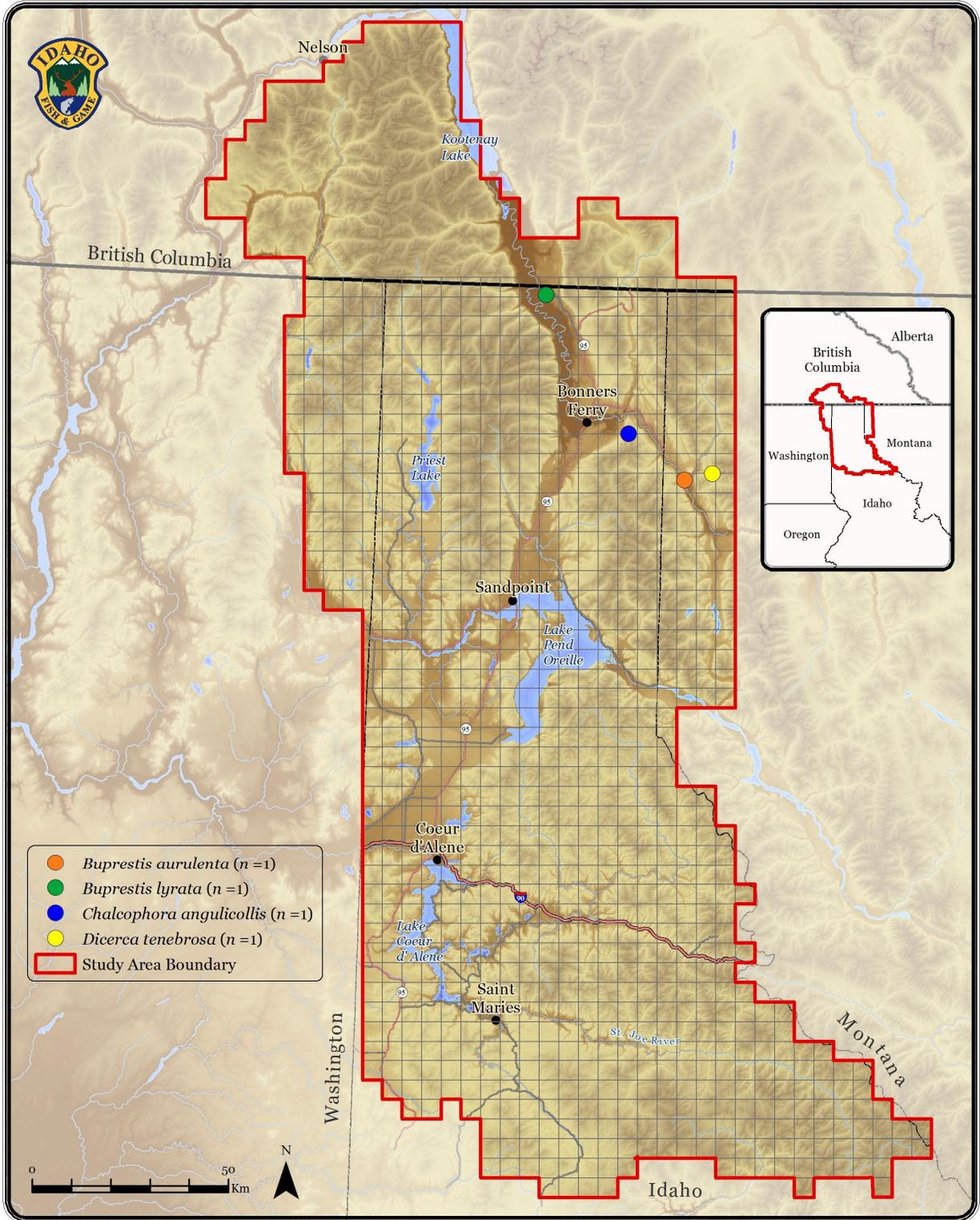
Map 6-36.

Multi-species Baseline Initiative: *Zacotus matthewsii* Detections



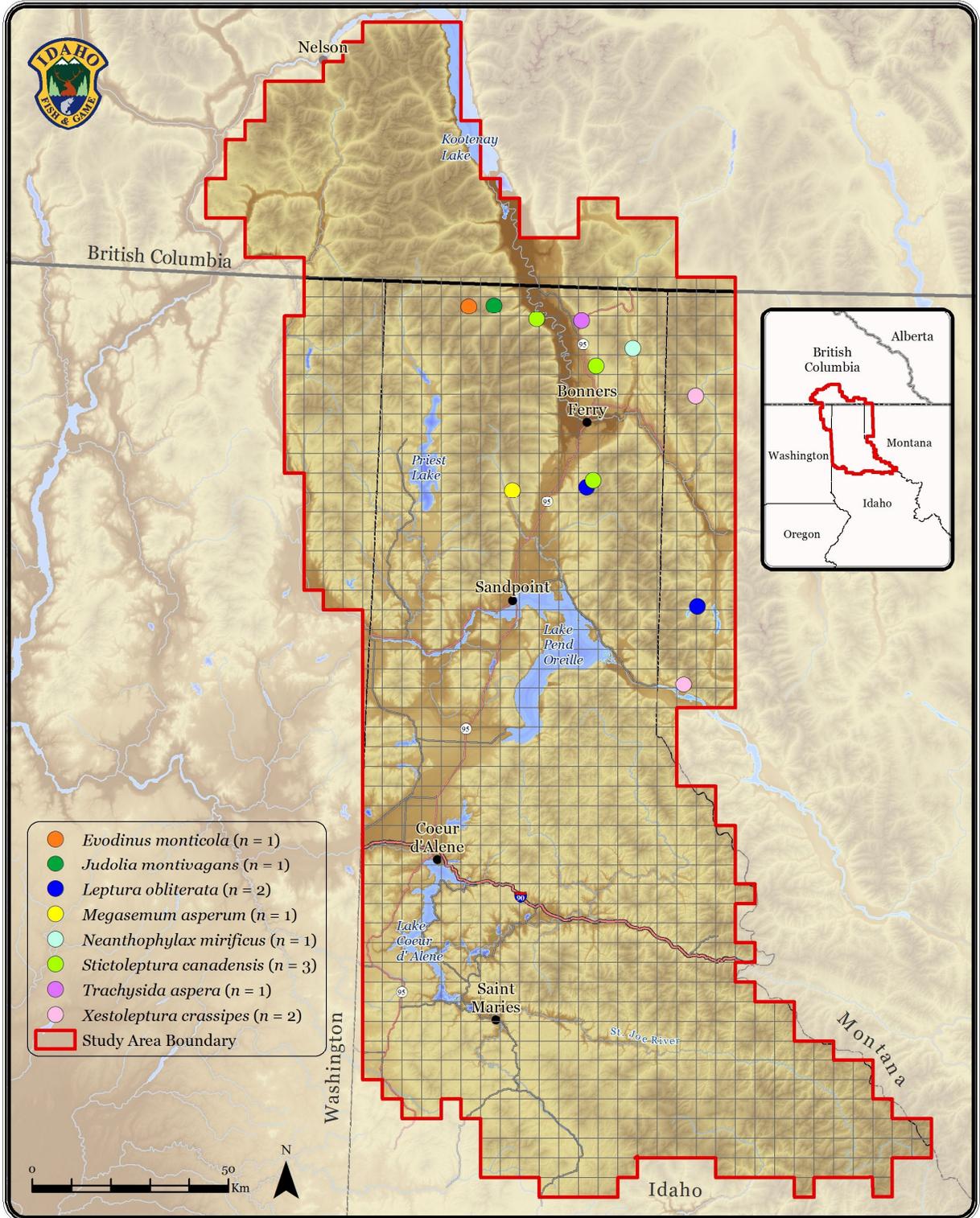
Map 6-37.

Multi-species Baseline Initiative: Jewel Beetles (Buprestidae)



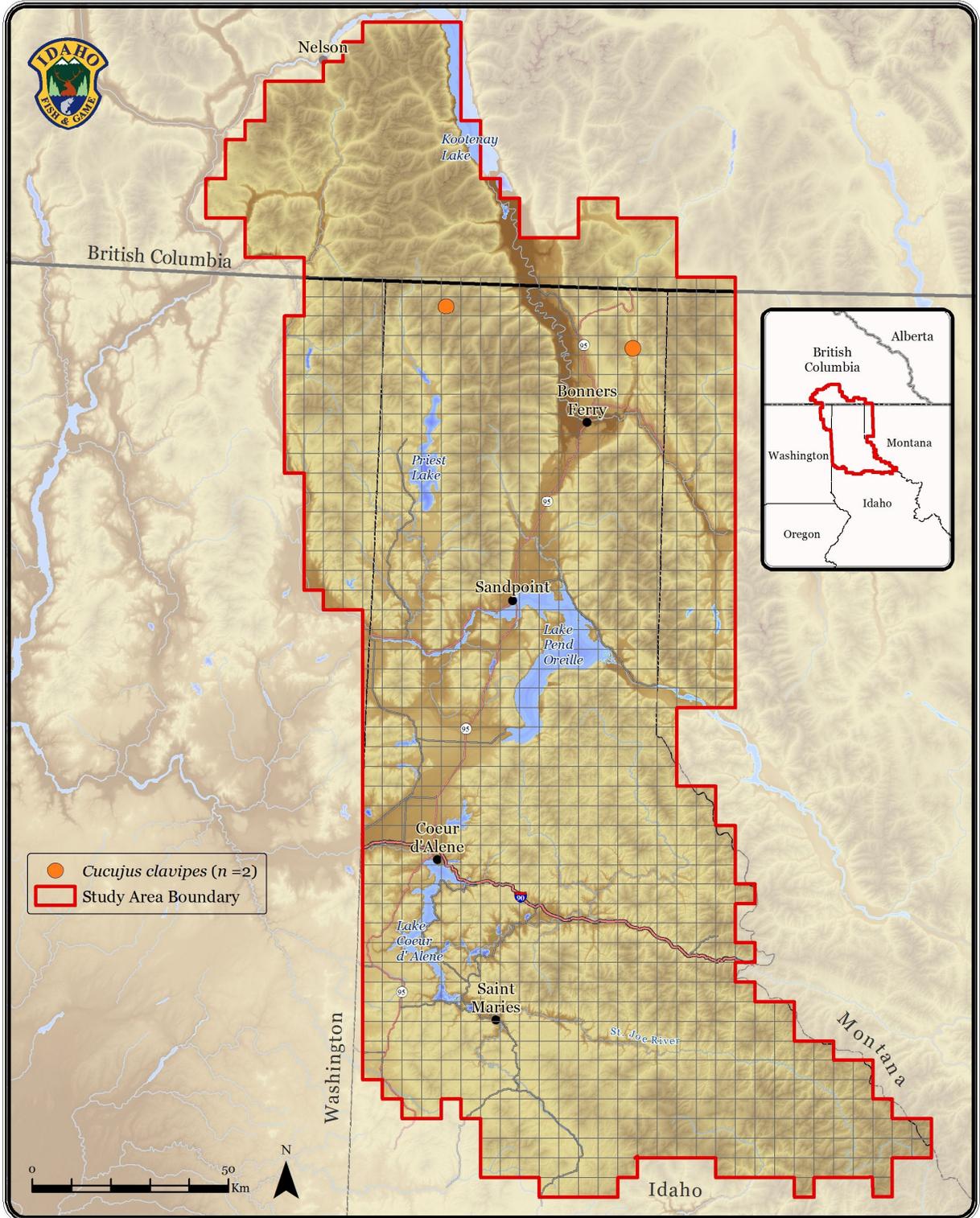
Map 6-38.

Multi-species Baseline Initiative: Long Horned Beetles (Cerambycidae)



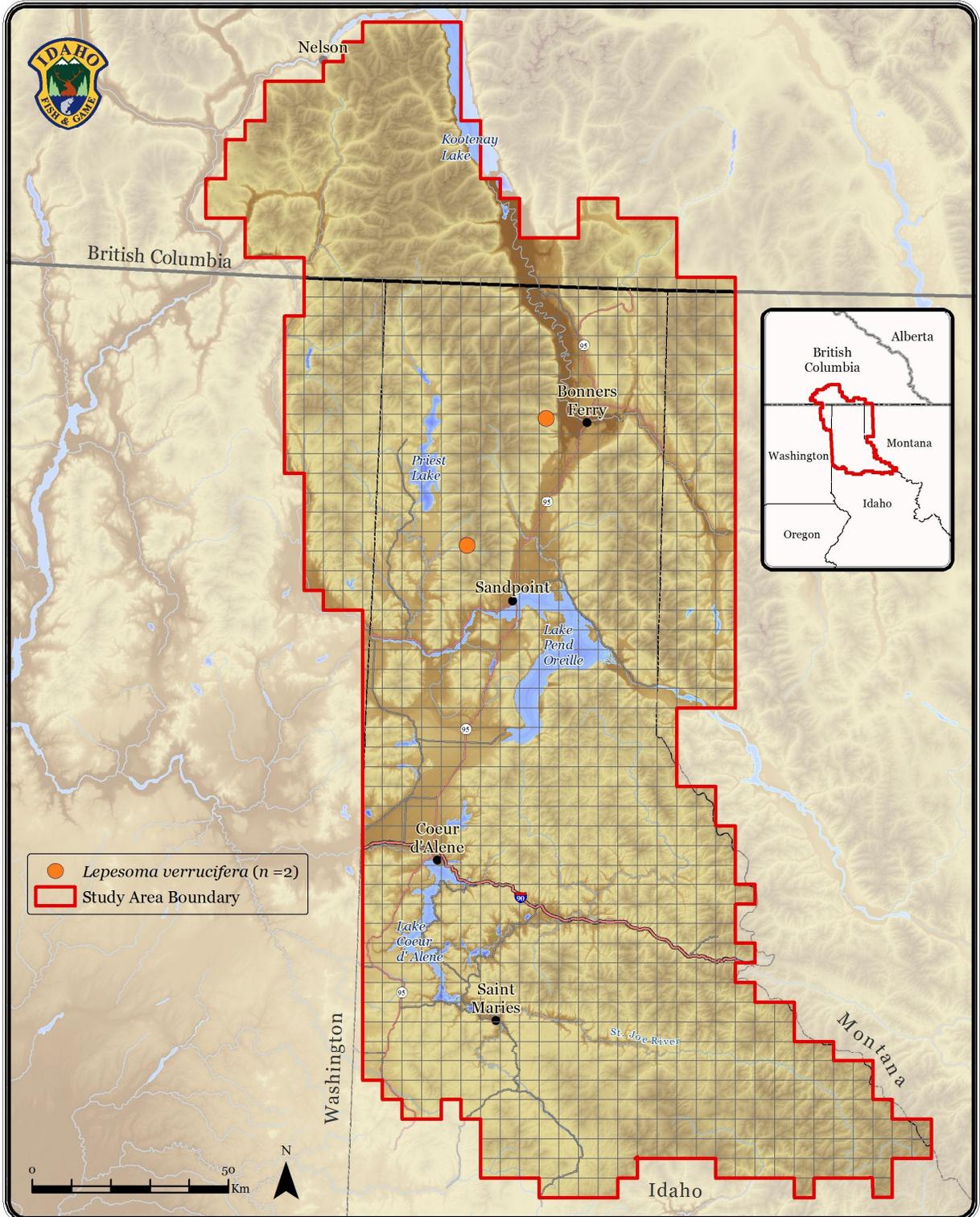
Map 6-39.

Multi-species Baseline Initiative: Flat Bark Beetles (Cucujidae)



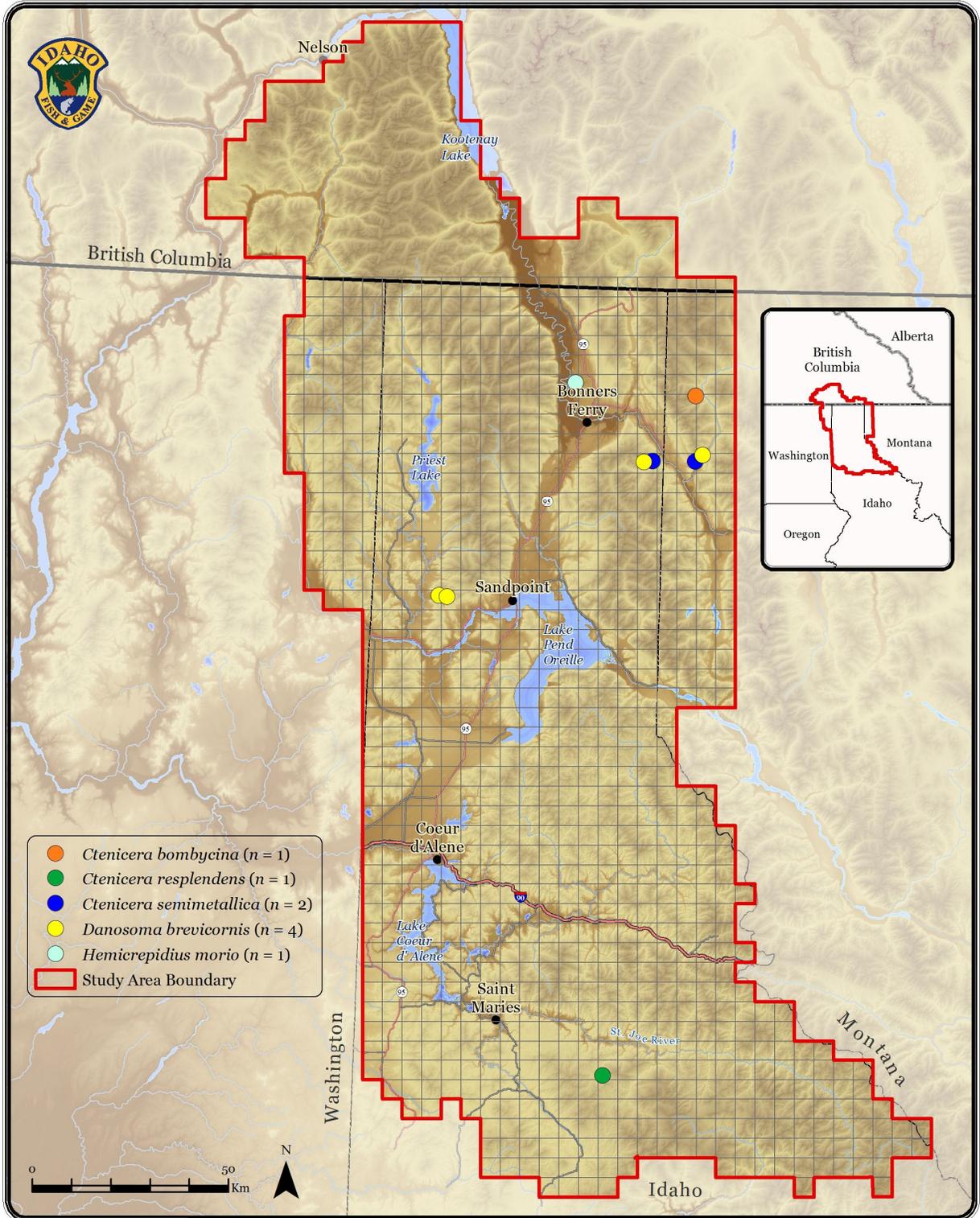
Map 6-40.

Multi-species Baseline Initiative: True Weevils (Curculionidae)



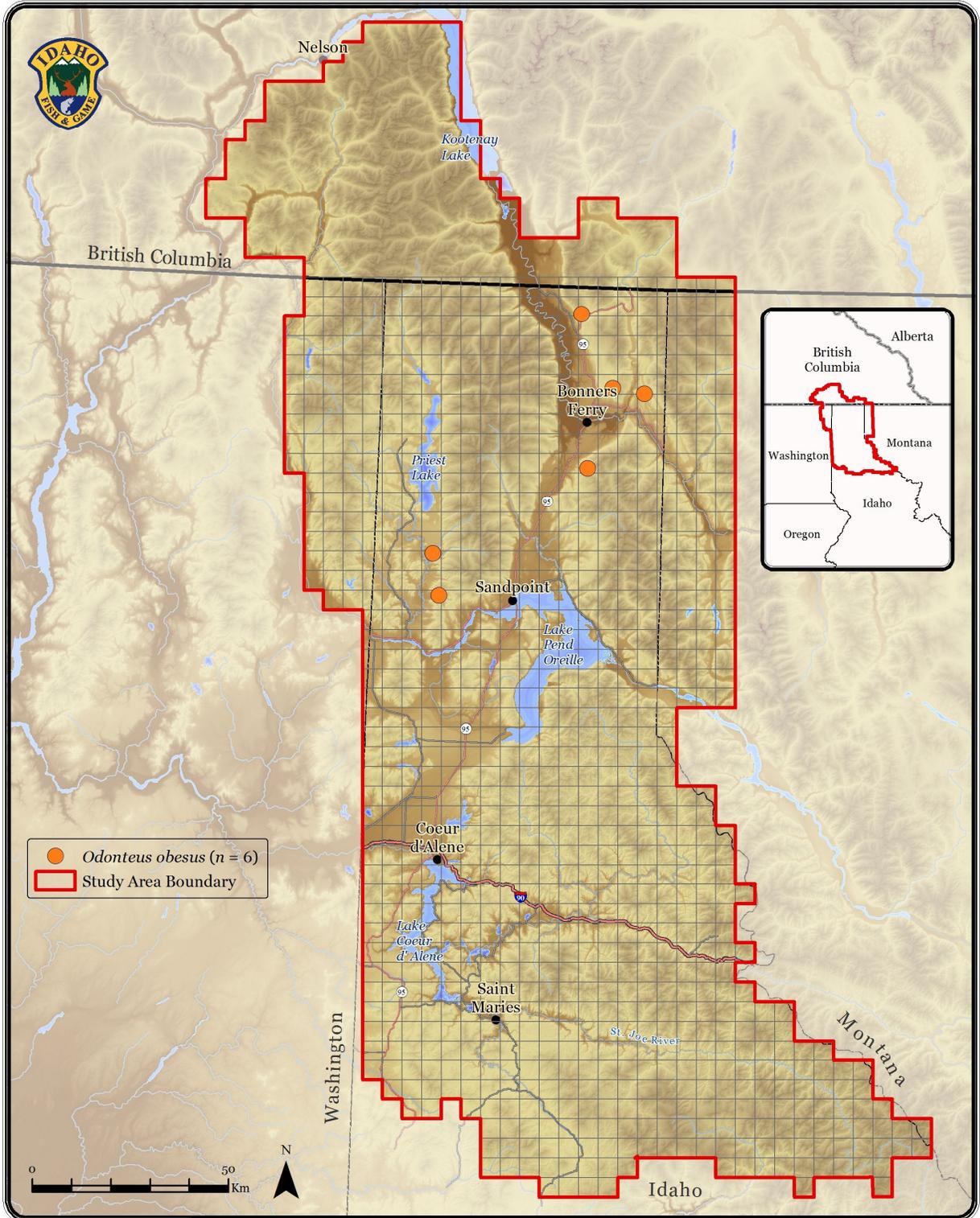
Map 6-41.

Multi-species Baseline Initiative: Click Beetles (Elateridae)



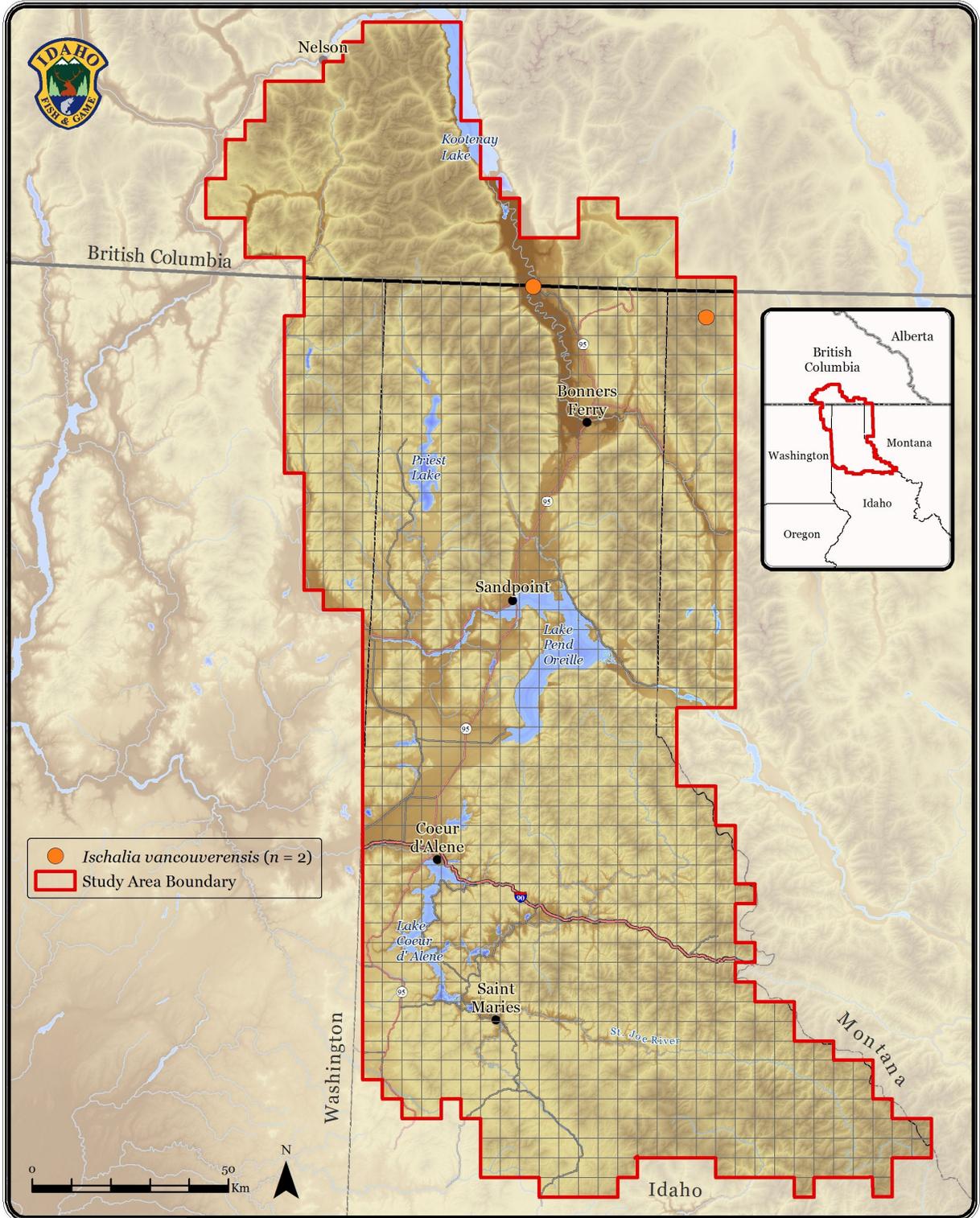
Map 6-42.

Multi-species Baseline Initiative: Earth Boring Dung Beetles (Geotrupidae)



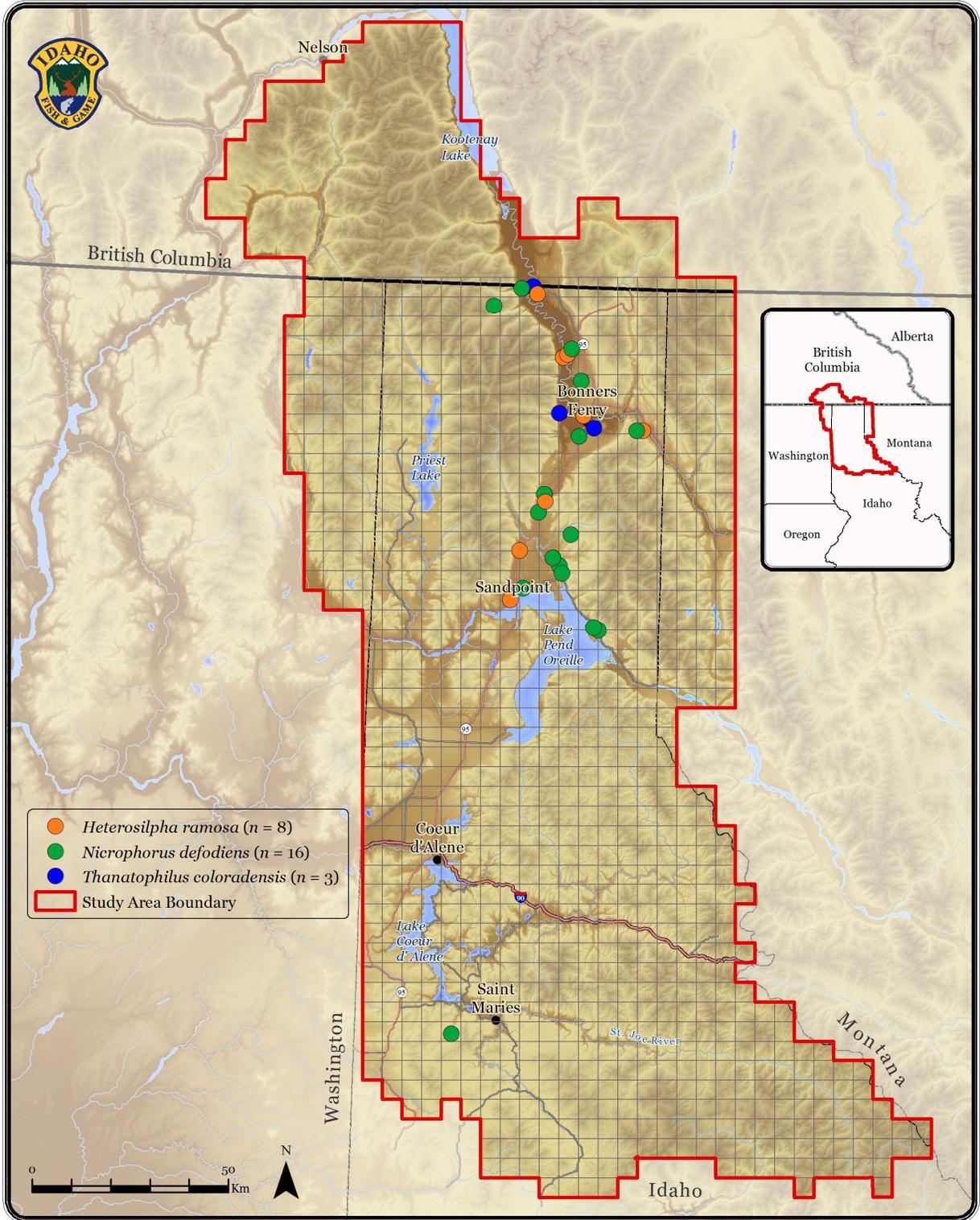
Map 6-43.

Multi-species Baseline Initiative: Fire-Colored Beetles (Pyrochroidae)



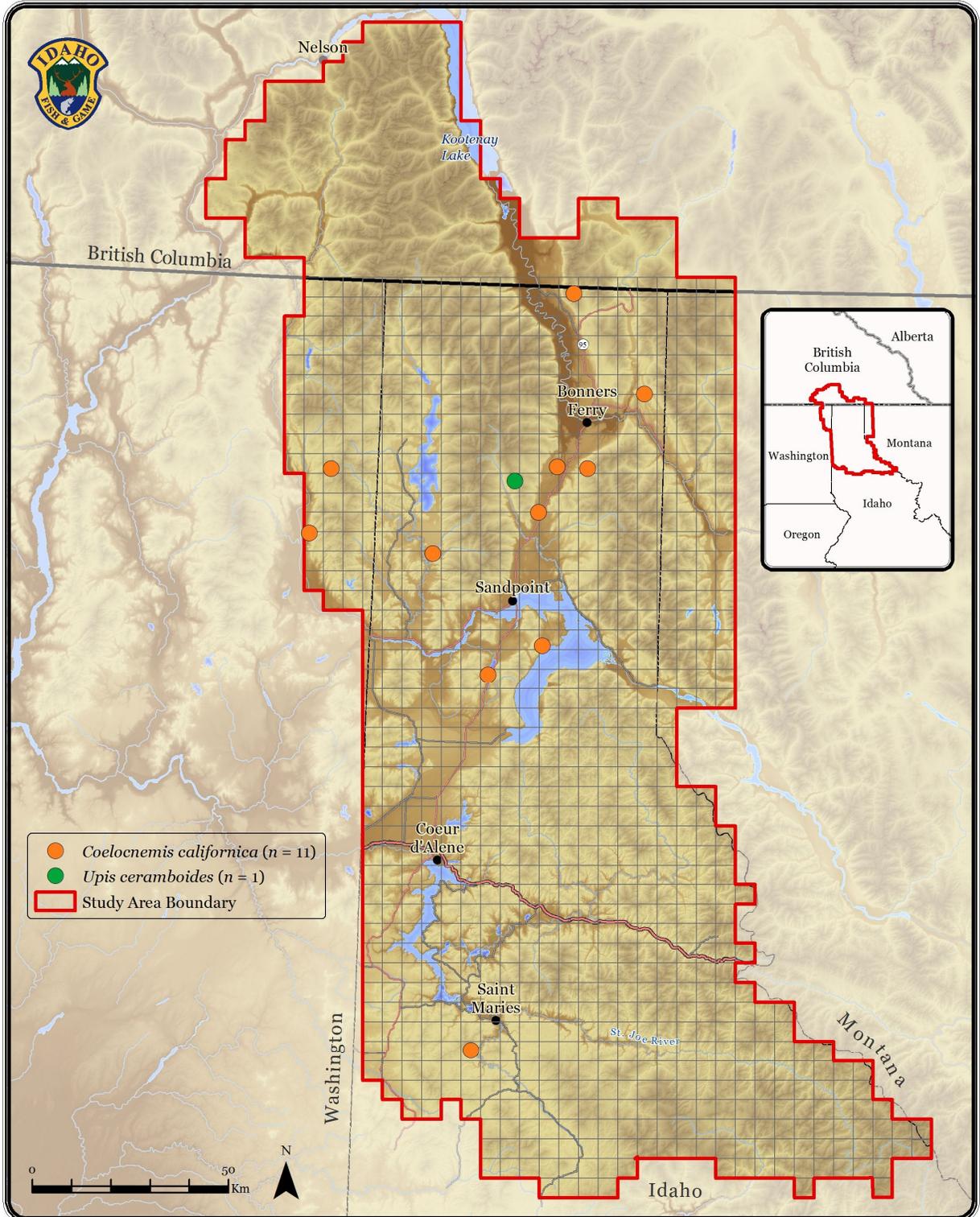
Map 6-44.

Multi-species Baseline Initiative: Carrion Beetles (Silphidae)



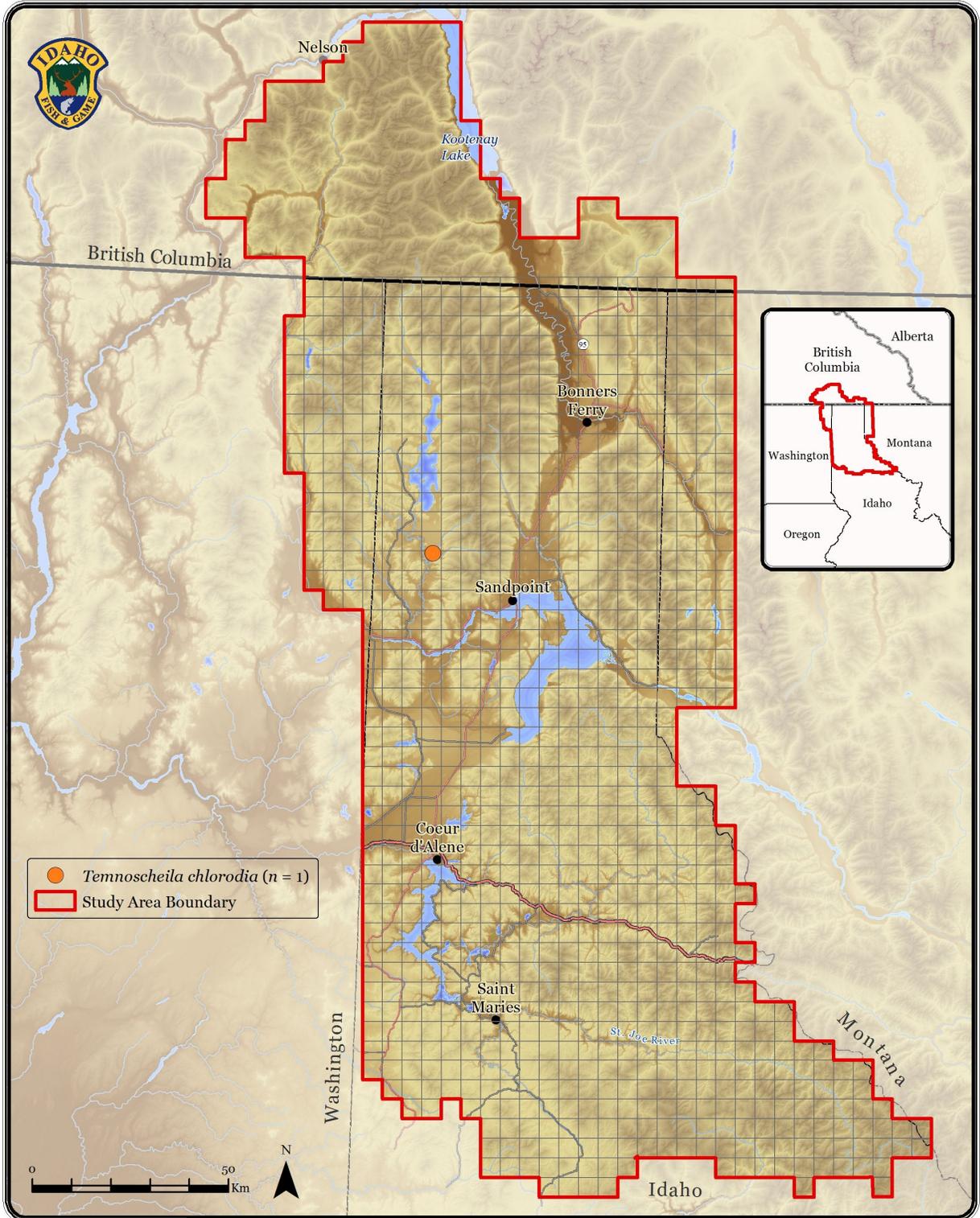
Map 6-45.

Multi-species Baseline Initiative: Darkling Beetles (Tenebrionidae)



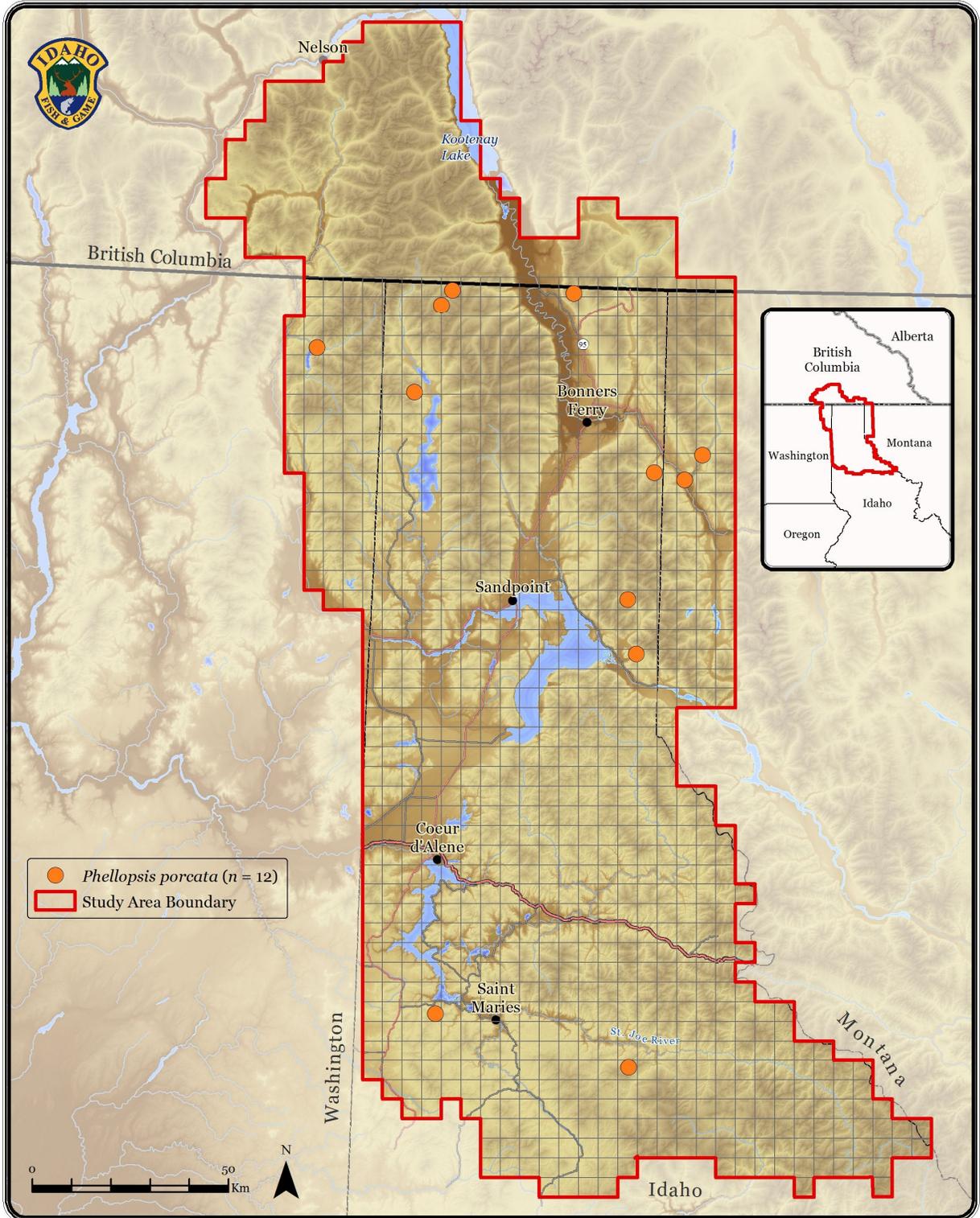
Map 6-46.

Multi-species Baseline Initiative: Bark-gnawing Beetles (Trogossitidae)



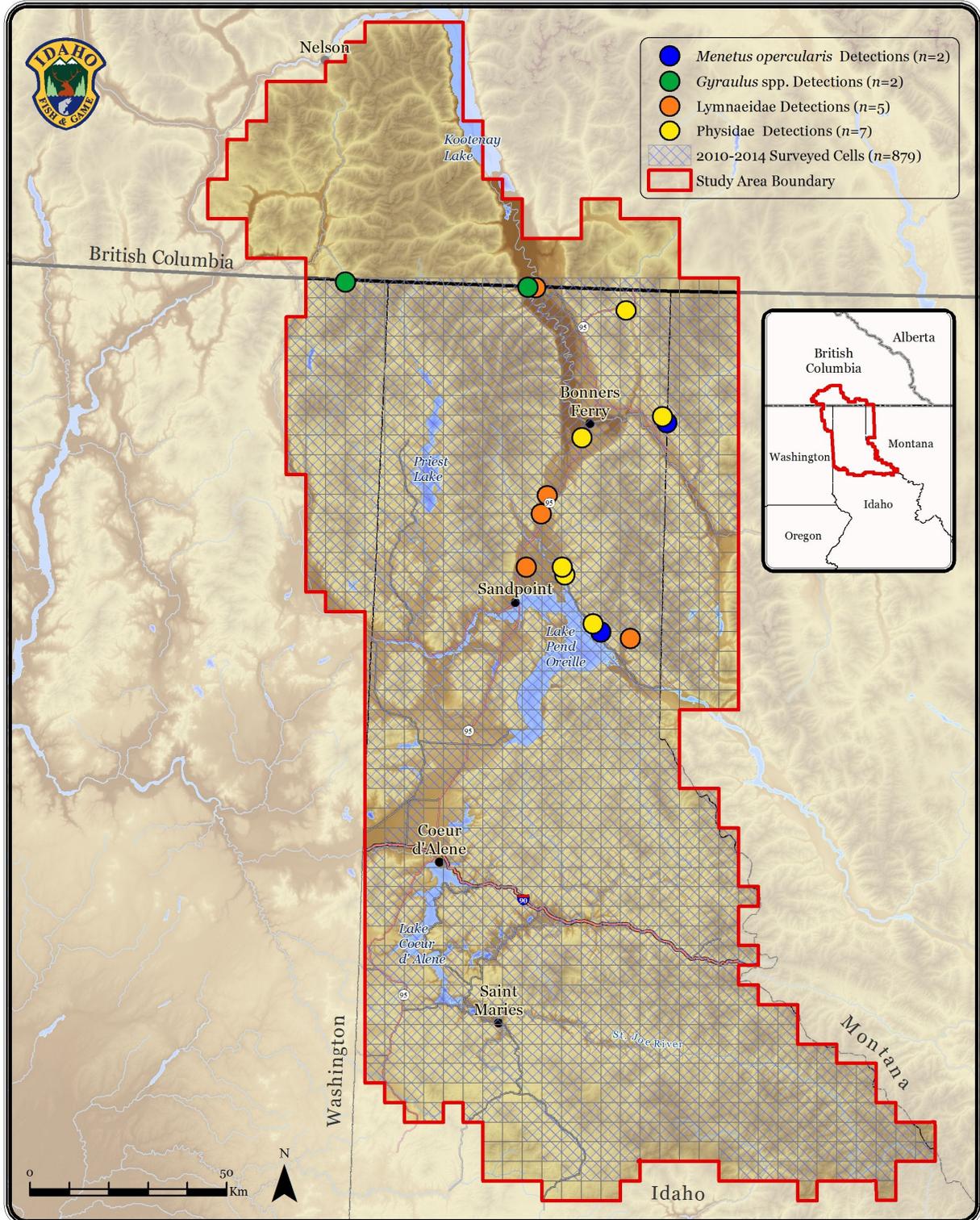
Map 6-47.

Multi-species Baseline Initiative: Ironclad Beetles (Zopheridae)



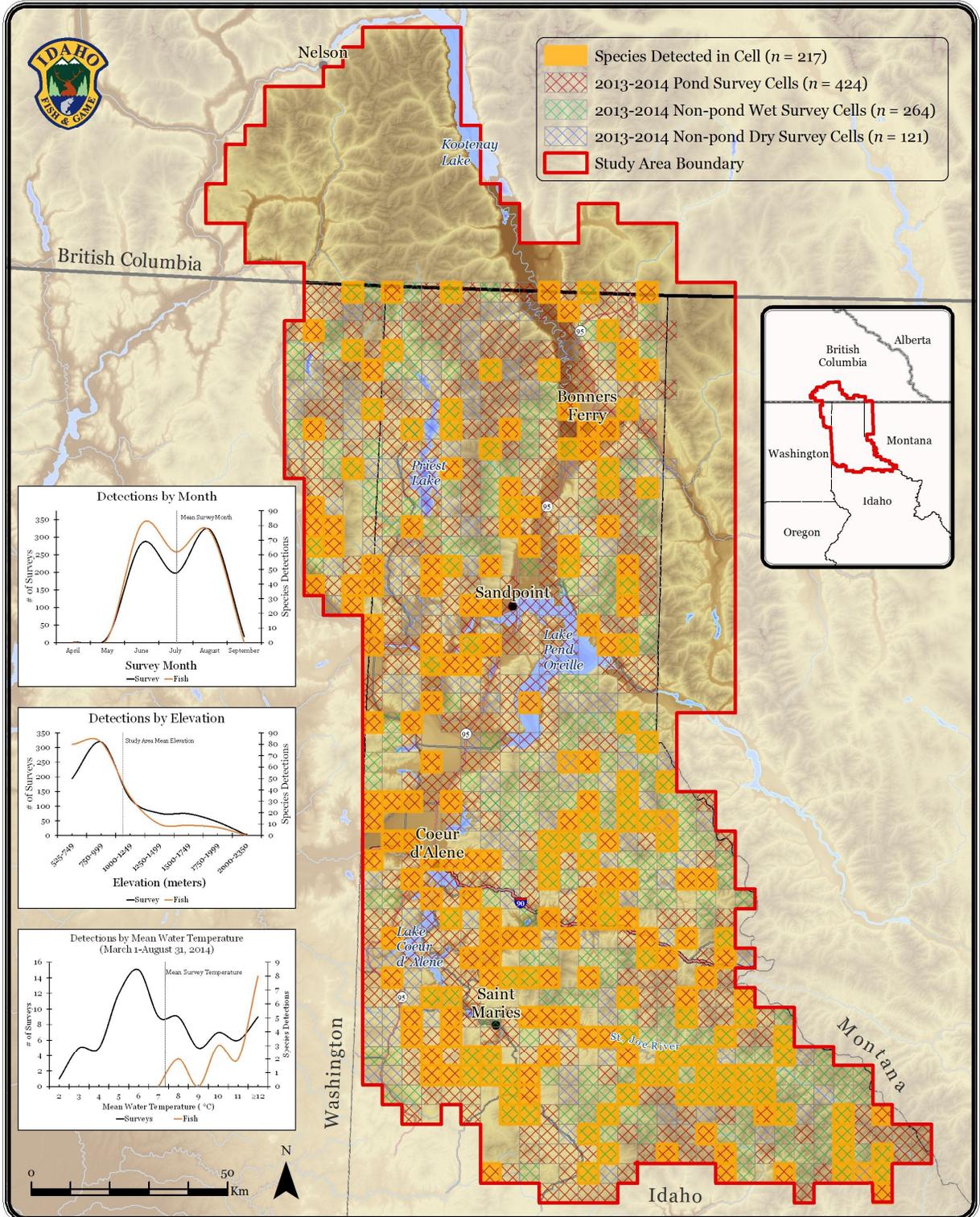
Map 6-48.

Multi-species Baseline Initiative: Aquatic Snail Detections



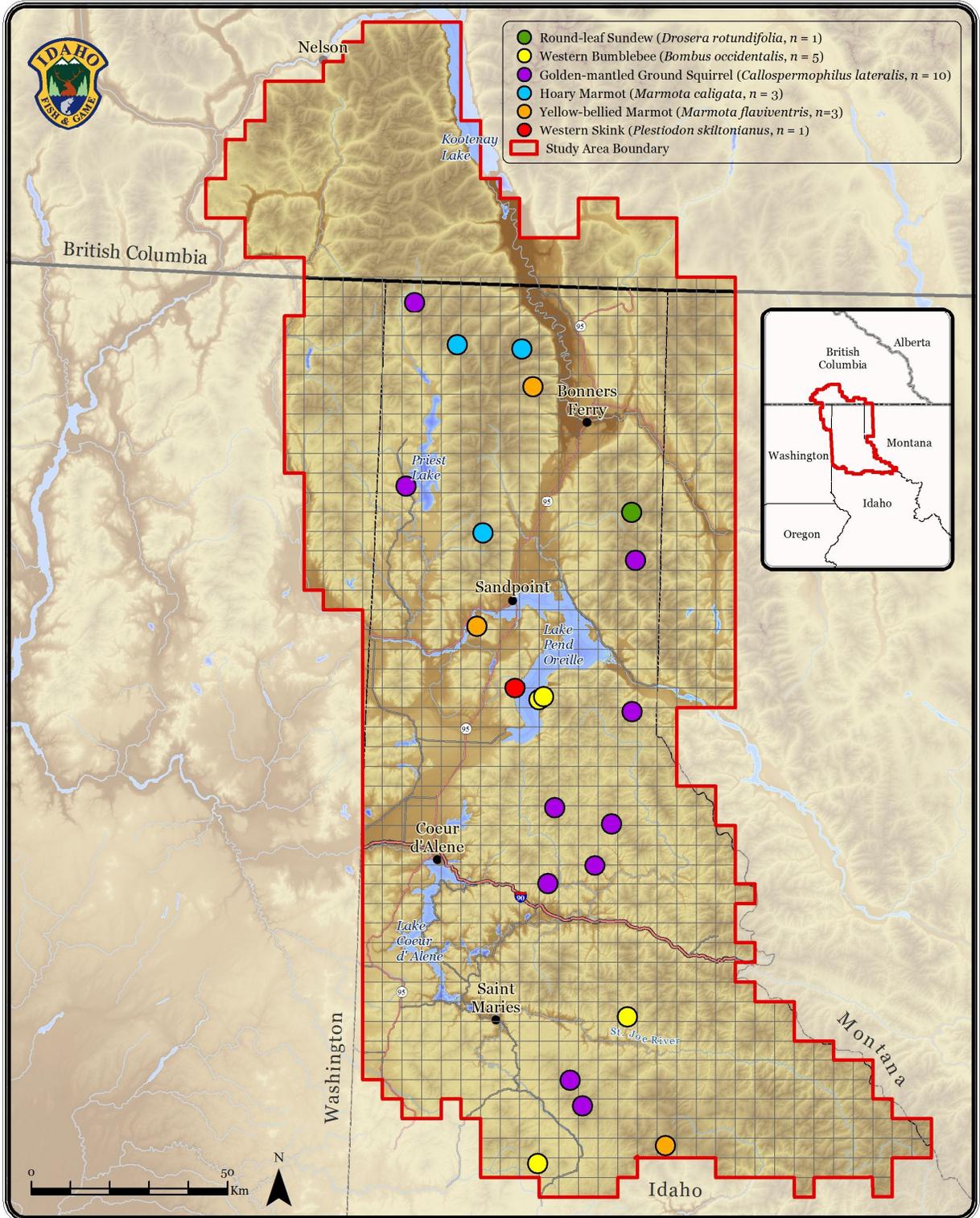
Map 6-49.

Multi-species Baseline Initiative: Fish Detections



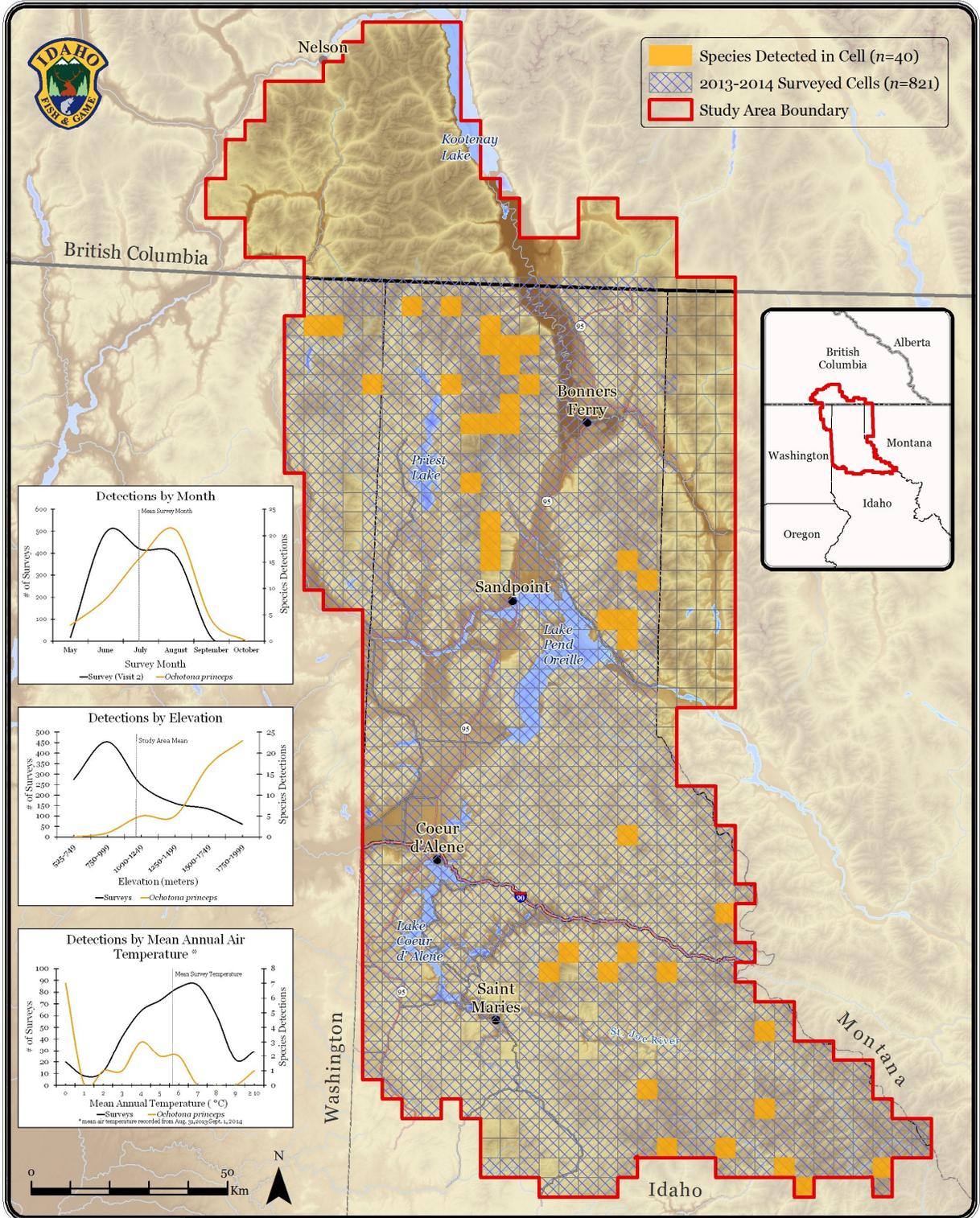
Map 6-50.

Multi-species Baseline Initiative: Opportunistic Detections



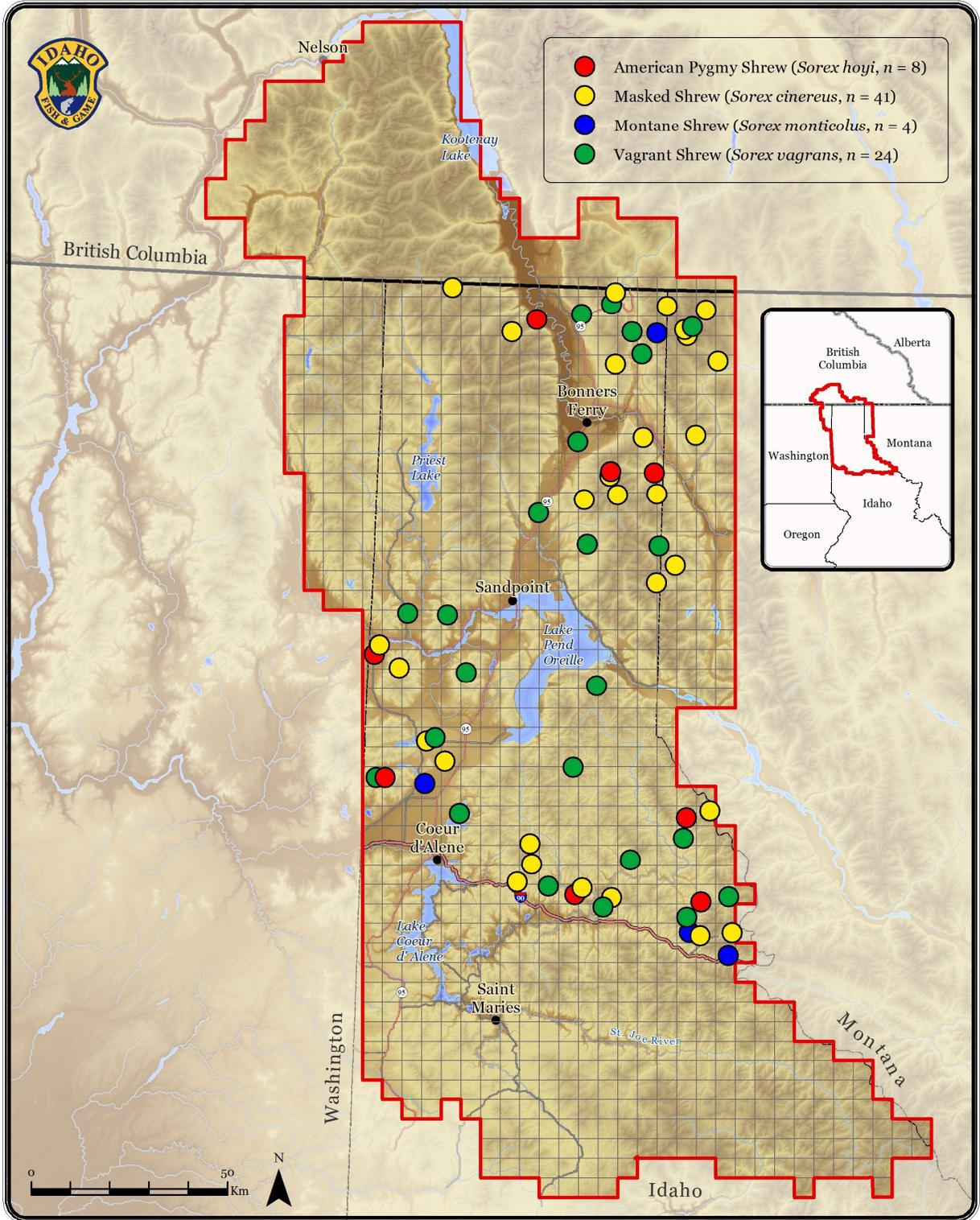
Map 6-51.

Multi-species Baseline Initiative: American Pika (*Ochotona princeps*) Detections



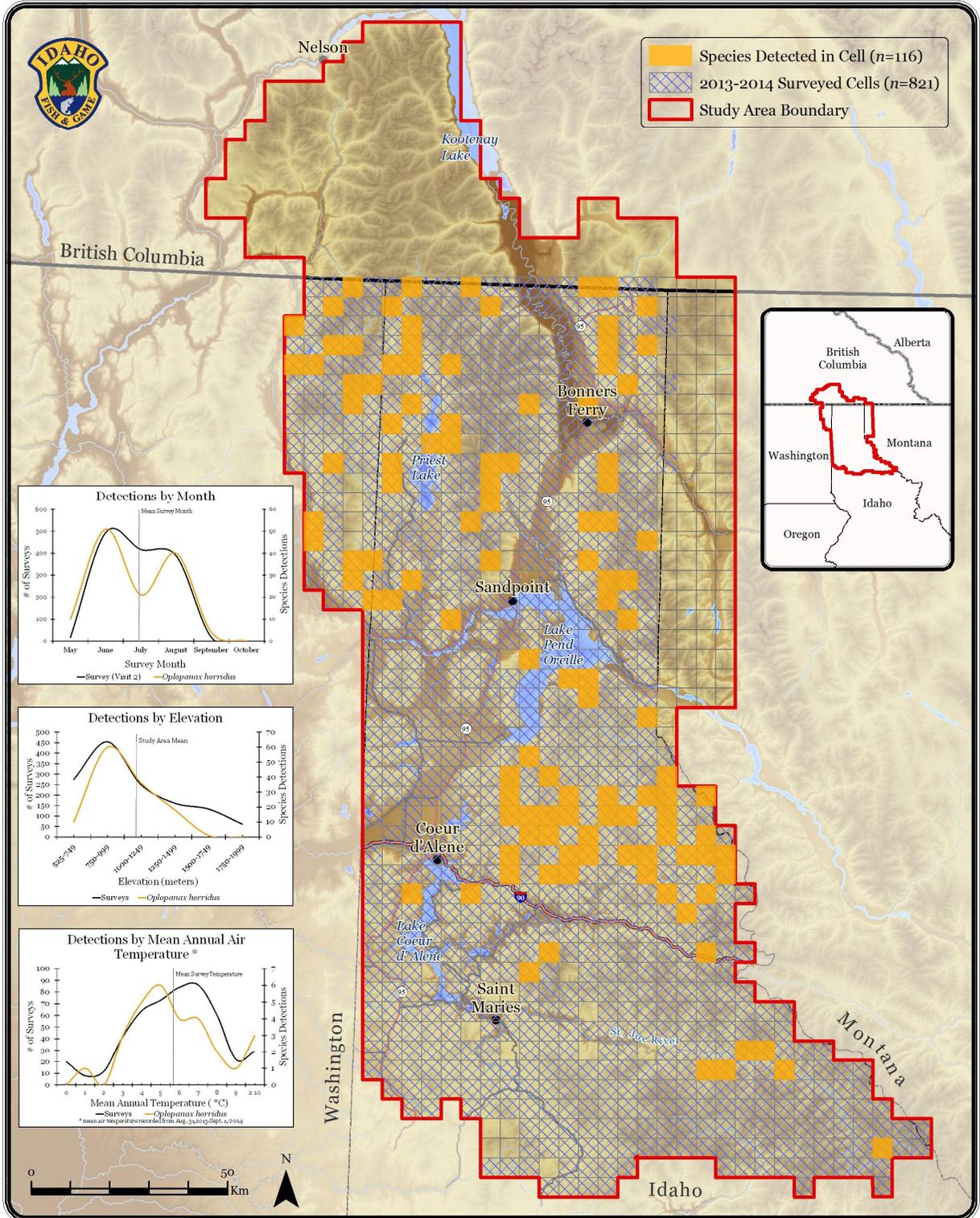
Map 6-52.

Multi-species Baseline Initiative: Shrew (*Sorex spp.*) Detections



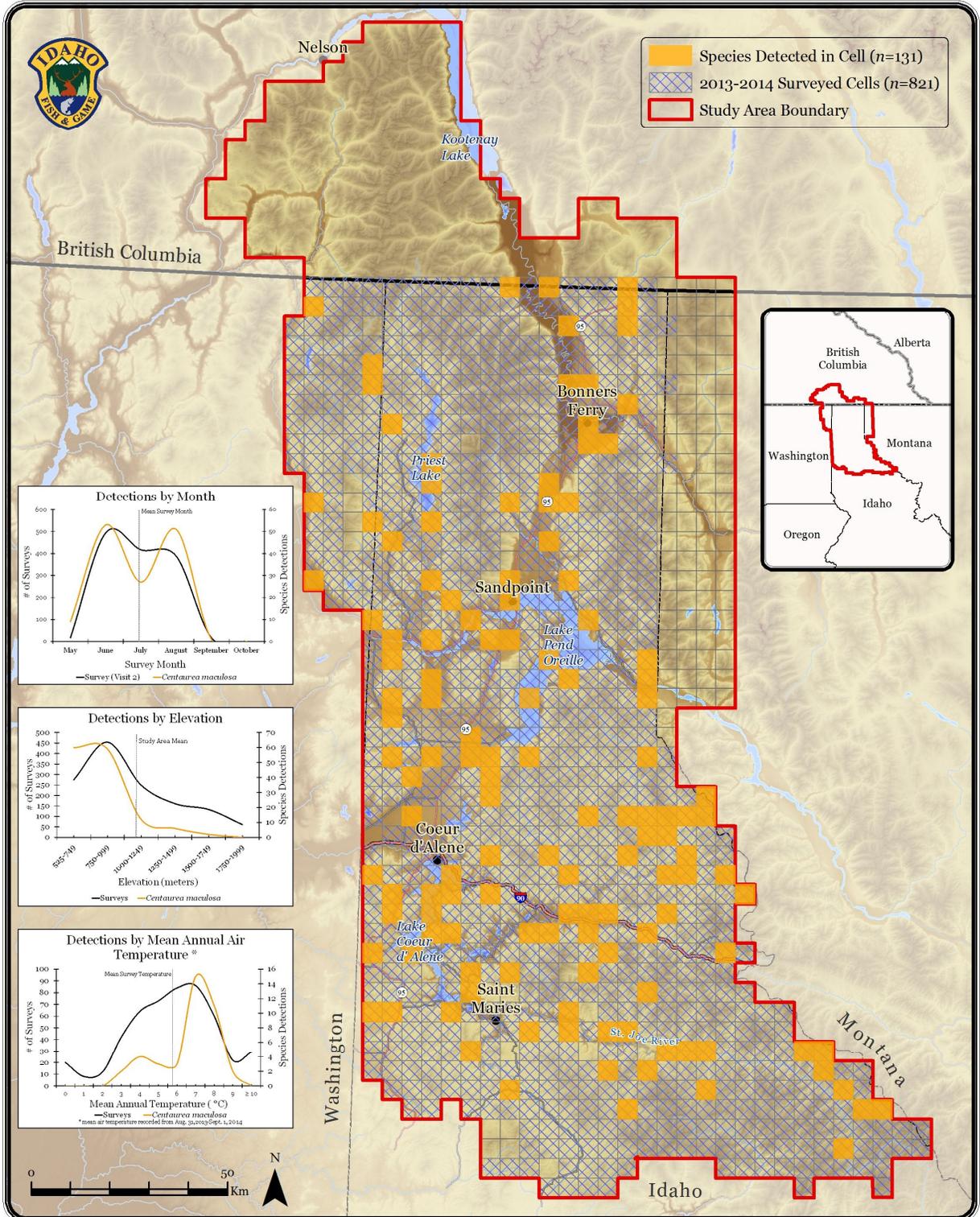
Map 6-53.

Multi-species Baseline Initiative: Devil's Club (*Oplopanax horridus*) Detections



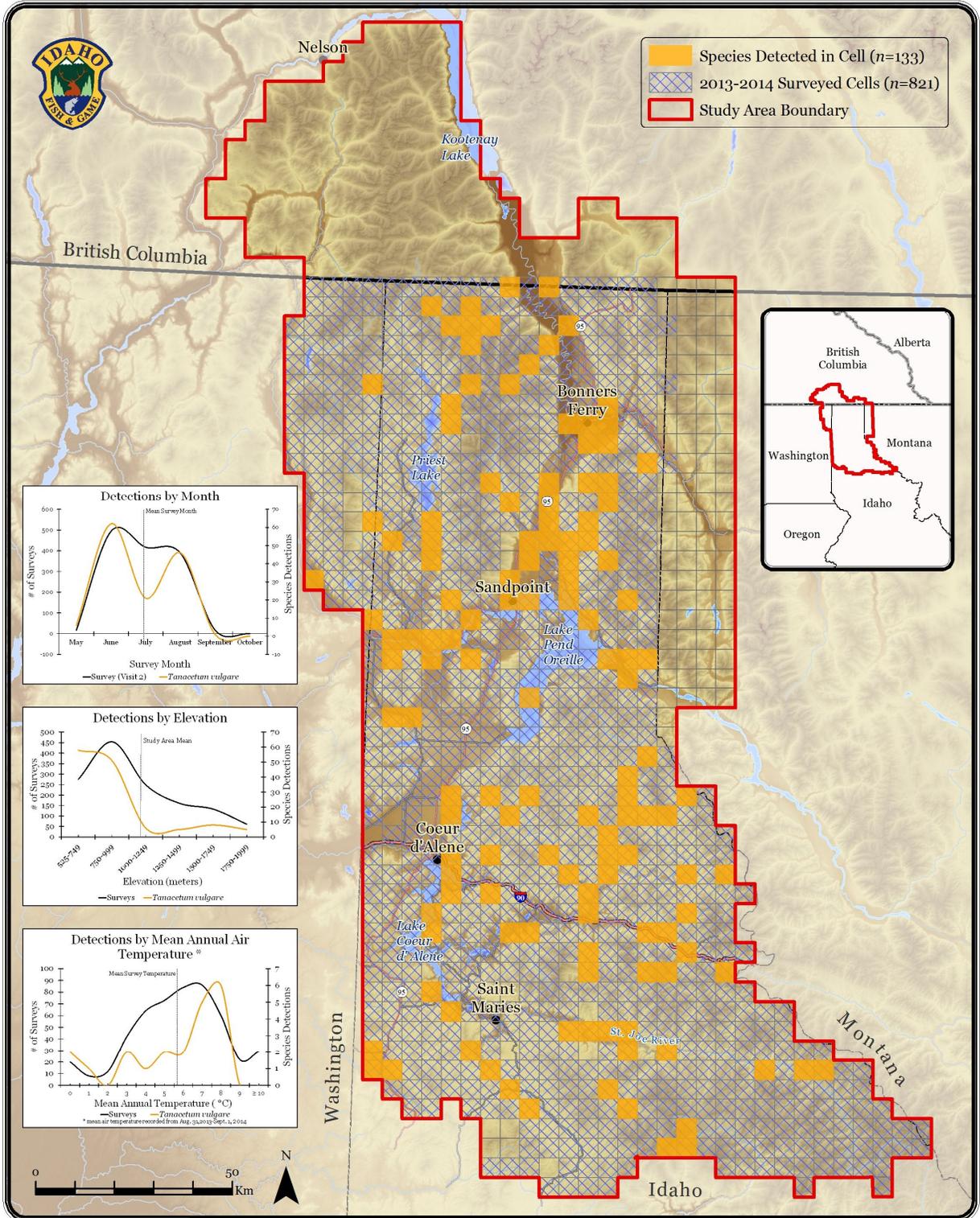
Map 6-54.

Multi-species Baseline Initiative: Spotted Knapweed (*Centaurea maculosa*) Detections



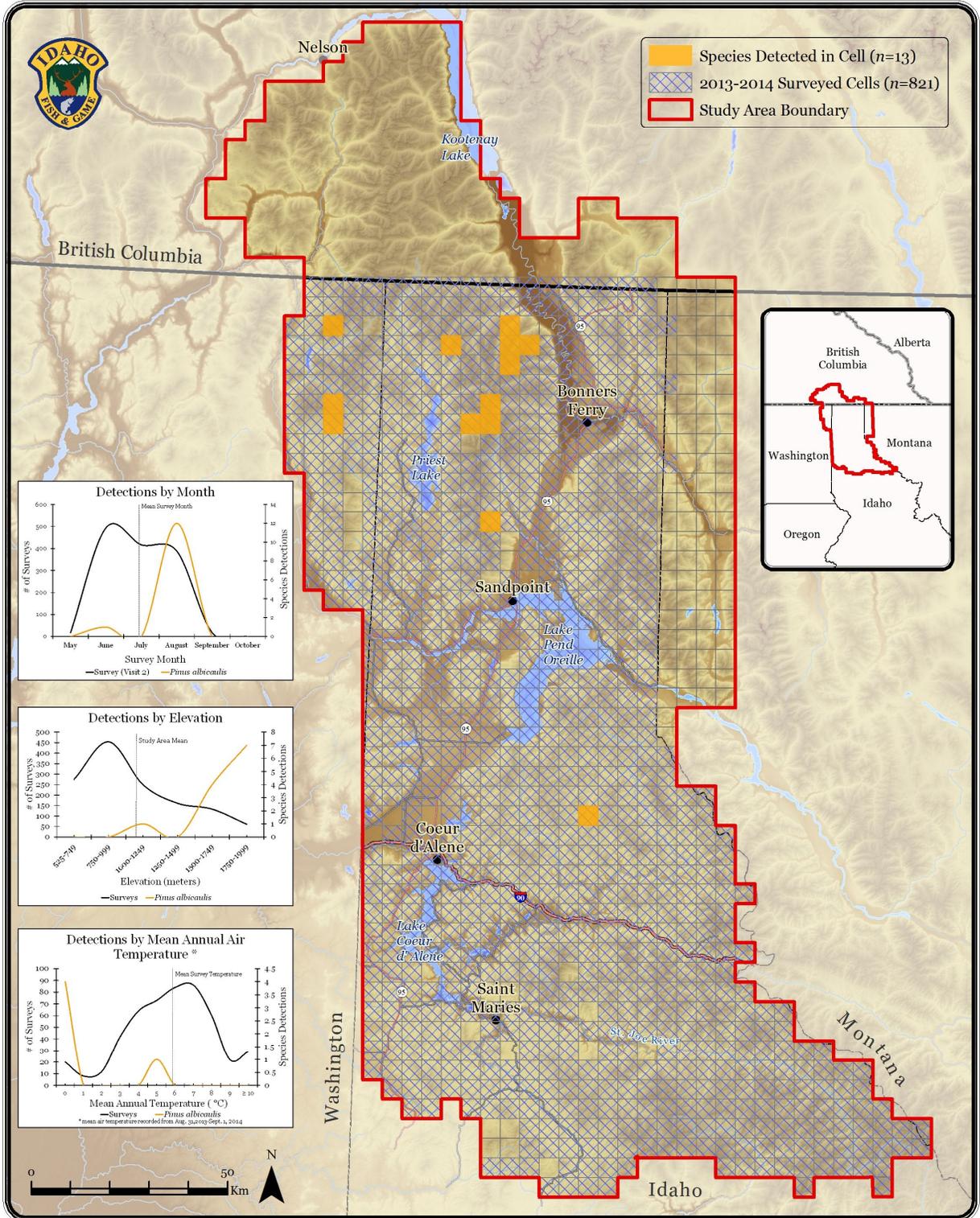
Map 6-55.

Multi-species Baseline Initiative: Tansy (*Tanacetum vulgare*) Detections



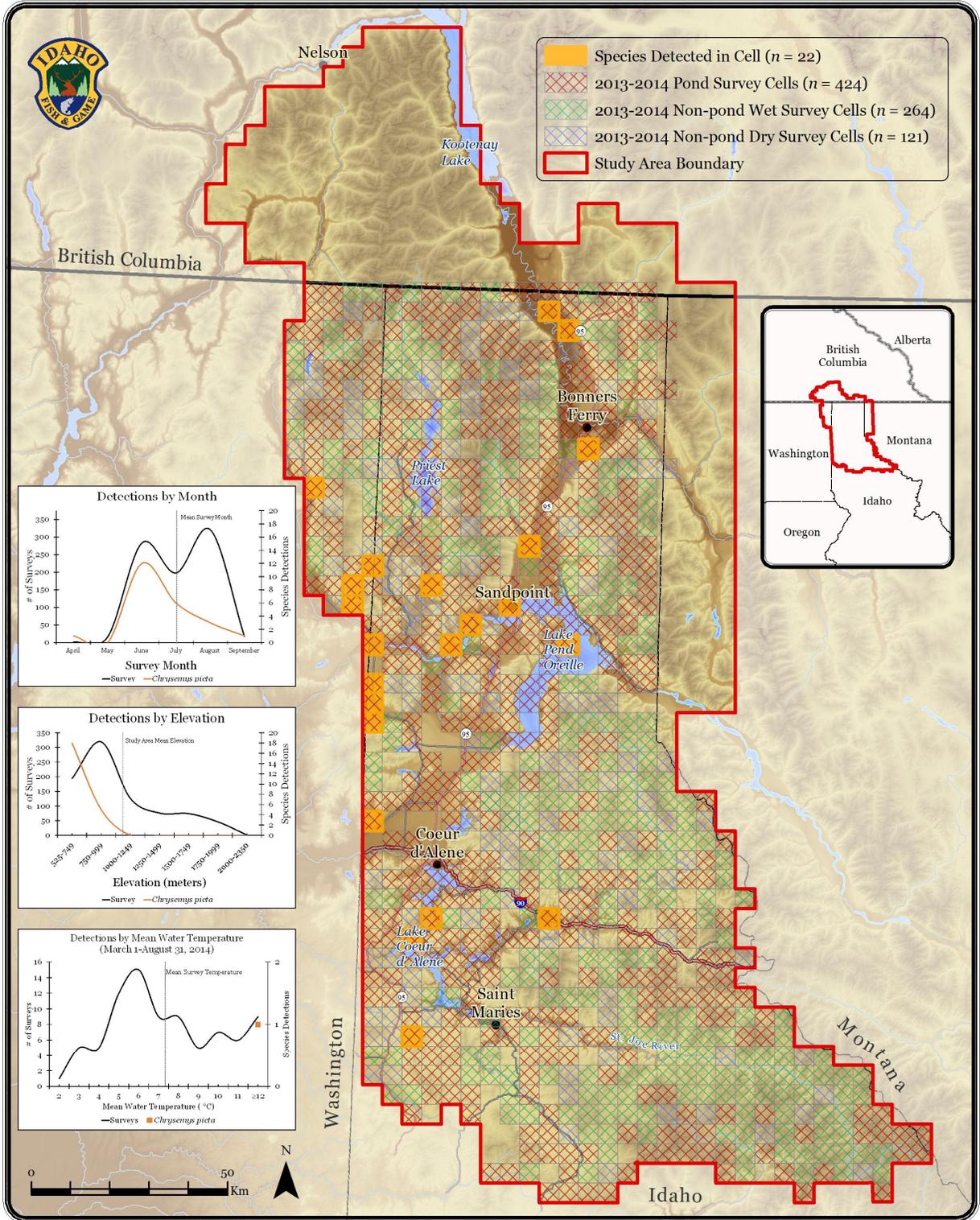
Map 6-56.

Multi-species Baseline Initiative: Whitebark Pine (*Pinus albicaulis*) Detections



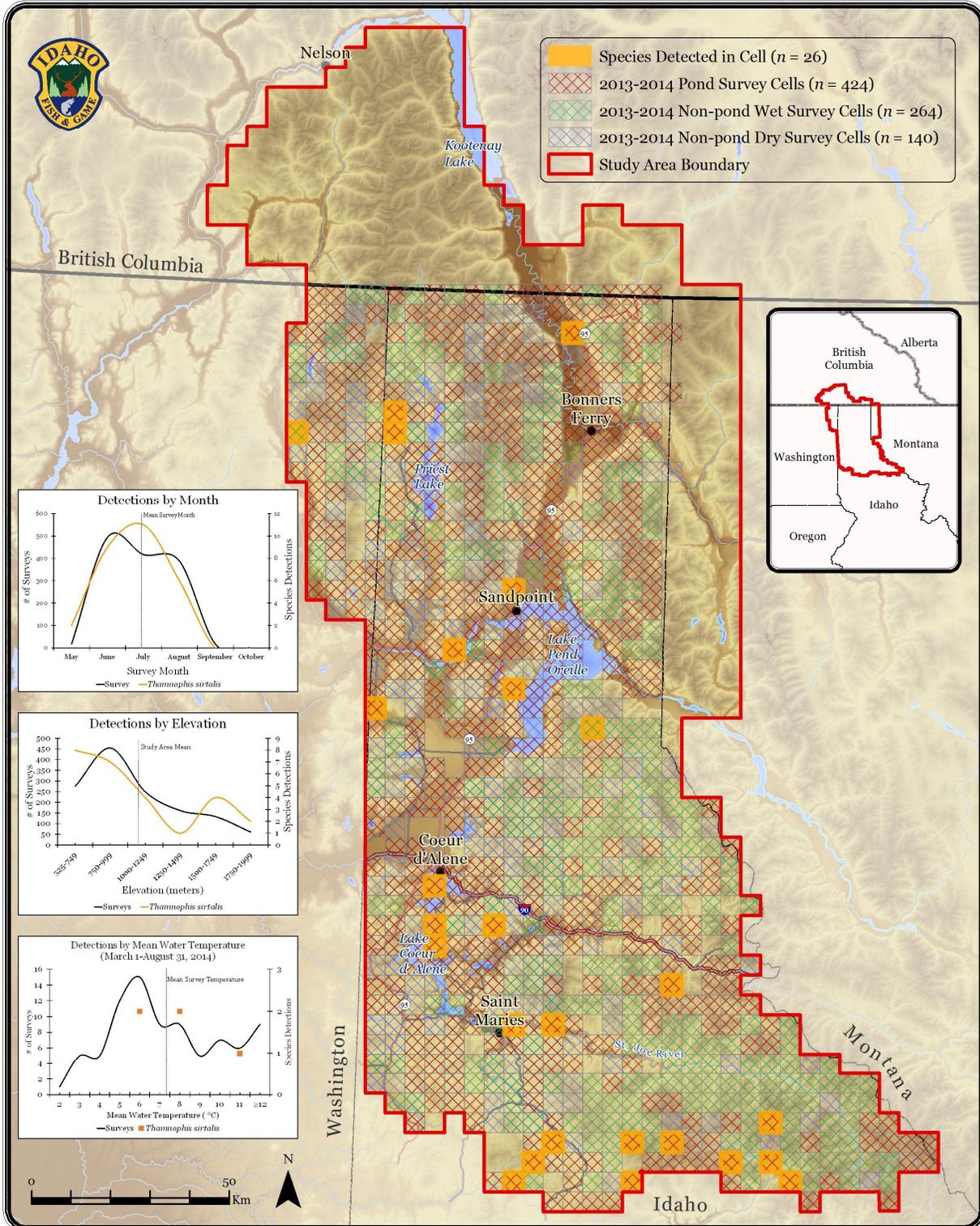
Map 6-57.

Multi-species Baseline Initiative: Painted Turtle (*Chrysemys picta*) Detections



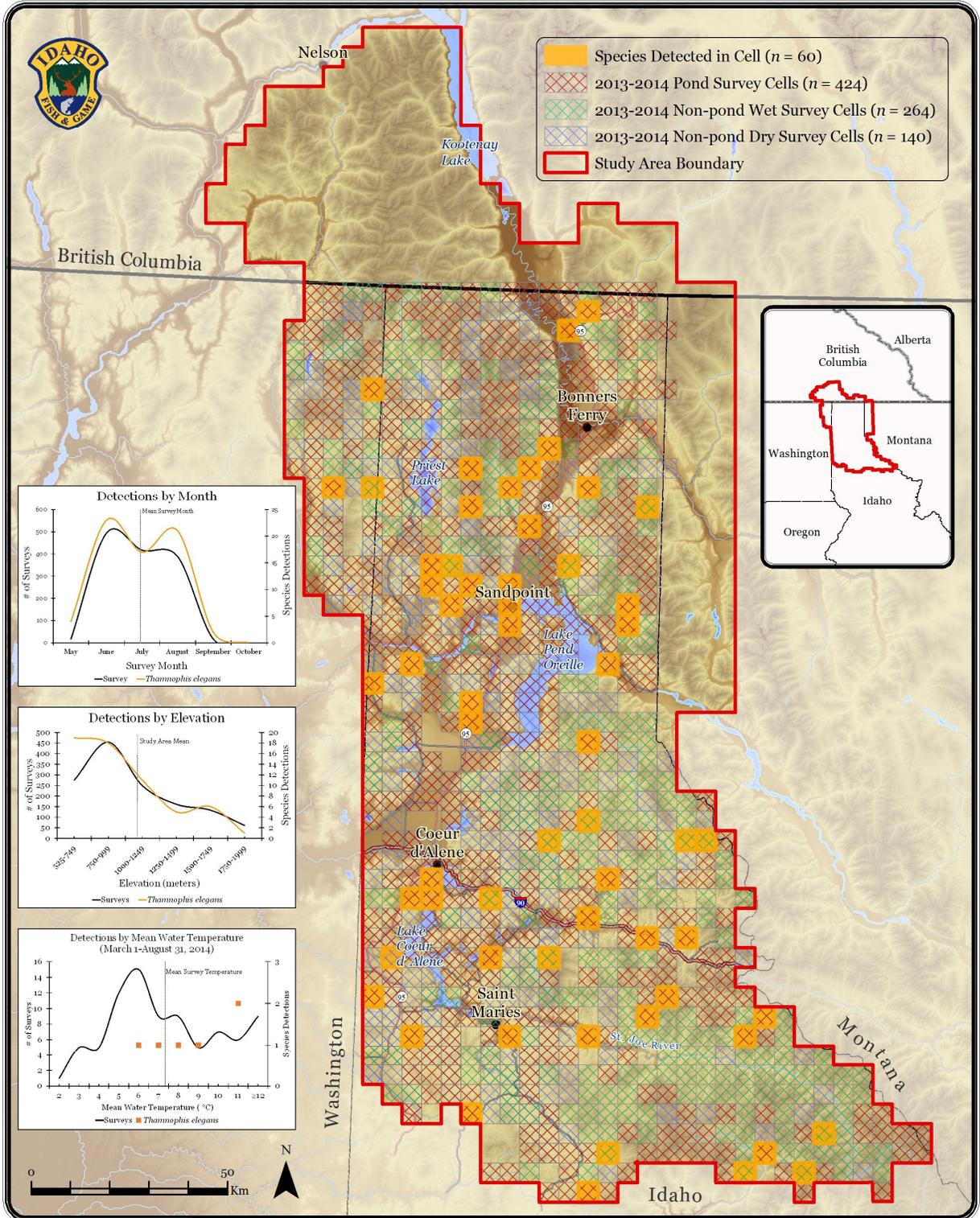
Map 6-58.

Multi-species Baseline Initiative: Common Garter Snake (*Thamnophis sirtalis*) Detections



Map 6-59.

Multi-species Baseline Initiative: Western Terrestrial Garter Snake (*Thamnophis elegans*) Detections



Map 6-60.