General Survey on Swallows by the Children of Ishikawa Prefecture

Every year, the elementary school 6th graders of Ishikawa Prefecture (approx. 13,000 children) conduct a survey on swallows.

This prefecture-wide survey covers only specimens within Ishikawa Prefecture.

This first survey was conducted in 1972, and since then it has been conducted annually for the past 40 years. Every year, survey results from 225 schools in the prefecture are compiled and published online.

The survey requires students to interview local residents, so it also serves as a way for residents to get to know more about wild swallows. In addition, many of the students today have the chance to compare their results with the results from the surveys their parents conducted when they were children, thereby gaining an even deeper understanding of swallows.

Through this survey, the students develop an awareness about the environment and living things.

The data charts below were compiled from 40 years of survey results.

Each school's results have been uploaded on the following website:

http://www.pref.ishikawa.jp/seikatu/kouryu/undou2PFD/tubamede-tashu/tsubamenodatasyu.html

http://www.pref.ishikawa.jp/seikatu/kouryu/undou2PFD/23tubamnode-ta/index.html

(Japanese-language only)

Figure 1 Japan

Figure 2 Ishikawa's General Survey Results & Shifts in Various Factors

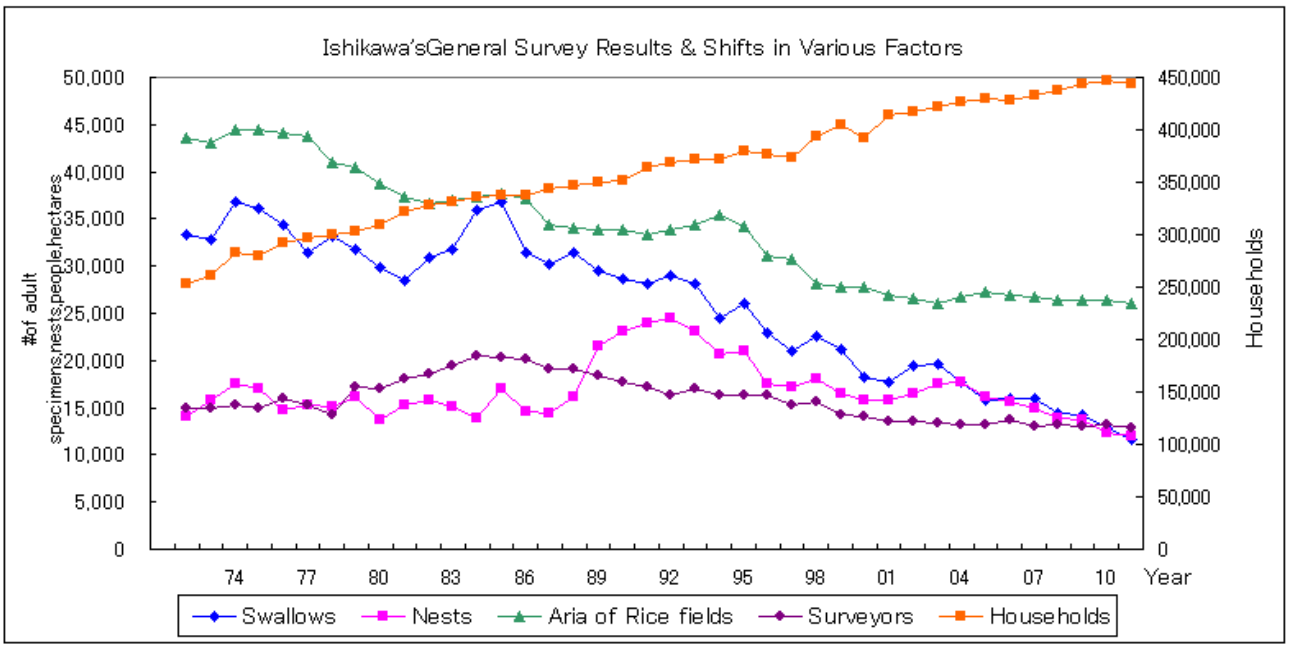


Chart 1 Numerical Summary of Changes in Data Results from the General Swallow Survey

#	Year	# of Swallows	# of Nests	Total Area of Rice Fields (in hectares) (ha)	# of Surveyors (# of students)	# of House-holds in Ishikawa	# of Old Nests	# of New Residential Buildings	Date First Sighted
1	1972	33,332	14,046	43,500	15,000	252,398	20,746	13,758	March 24
2	1973	32,878	15,760	43,100	15,000	260,515	24,787	15,153	March 17
3	1974	36,751	17,600	44,500	15,200	283,588	26,534	11,348	March 15
4	1975	36,055	17,060	44,500	15,000	279,390	29,549	13,540	March 29
5	1976	34,348	14,825	44,100	16,000	291,456	30,105	14,083	March 6
6	1977	31,406	15,263	43,700	15,300	296,201	30,972	11,098	March 4
7	1978	33,166	15,161	40,900	14,300	300,161	30,593	11,507	March 9
8	1979	31,737	16,203	40,500	17,200	303,701	38,661	11,171	March 8
9	1980	29,898	13,742	38,800	17,000	308,666	35,518	9,629	March 24
10	1981	28,437	15,290	37,300	18,000	321,900	38,814	8,062	March 14
11	1982	30,967	15,856	36,700	18,600	327,776	40,120	9,782	March 8
12	1983	31,856	15,069	36,900	19,530	331,905	38,982	9,942	March 4
13	1984	35,986	13,901	37,400	20,560	335,433	37,857	9,784	March 18
14	1985	36,730	17,056	37,700	20,390	336,850	42,765	9,639	March 16
15	1986	31,504	14,567	37,100	20,215	337,351	41,472	11,132	March 9
16	1987	30,261	14,458	34,400	19,135	343,283	40,659	13,328	March 7
17	1988	31,477	16,087	34,000	19,130	346,889	40,085	13,363	March 16
18	1989	29,477	21,528	33,800	18,378	350,396	40,690	13,885	March 2
19	1990	28,693	23,147	33,800	17,662	352,007	44,058	14,502	April 2
20	1991	28,110	23,909	33,300	17,110	364,076	41,092	11,353	March 26
21	1992	28,916	24,545	33,900	16,404	368,069	40,636	11,286	March 13
22	1993	28,042	23,089	34,300	17,089	372,425	45,285	13,056	April 2
23	1994	24,437	20,643	35,500	16,236	372,425	41,578	13,632	April 3
24	1995	26,051	21,059	34,200	16,306	379,233	43,574	12,604	April 3
25	1996	22,916	17,478	31,100	16,279	376,671	43,943	14,338	April 4
26	1997	20,925	17,160	30,800	15,331	373,878	38,822	11,294	April 10
27	1998	22,557	17,971	28,100	15,544	393,853	37,910	10,627	April 4
28	1999	21,226	16,433	27,800	14,192	404,117	37,374	10,544	April9
29	2000	18,195	15,755	27,700	14,034	392,664	32,871	10,216	March 30
30	2001	17,693	15,752	26,900	13,575	413,687	31,087	9,054	April 5
31	2002	19,435	16,552	26,600	13,499	417,846	30,376	9,717	March 15
32	2003	19,593	17,514	26,100	13,324	421,882	27,708	9,213	March 30
33	2004	17,686	17,647	26,800	13,162	426,294	26,195	9,538	March 23
34	2005	15,713	16,222	27,200	13,179	429,775	26,187	8,857	March 30
35	2006	15,890	15,582	26,900	13,787	427,775	24,113	9,537	April 3
36	2007	16,057	14,992	26,700	13,060	432,811	23,432	8,851	April 3
37	2008	14,334	13,886	26,400	13,135	437,783	22,788	8,331	April 4
38	2009	14,271	13,673	26,400	13,017	443,271	21,187	6,237	March 29
39	2010	12,848	12,319	26,400	13,186	446,299	21,769	6,484	March 27
40	2011	11,708	11,991	26,000	12,896	443,769	20,346	6,927	April 16
		1,031,562	670,791	-	635,945	-	1,351,240		
		25,789	16,770		15,899		33,781		

Reference
・figures for Total Area of Rice Fields are taken from “Total Crop Yield” data from MAFF
・figures for # of New Residential Buildings are taken from “Building Construction” data from MLIT

Nest Counting Before 1989: Nests with fledglings and nests under construction
1989 and after: Nests with swallows and nests under construction

Date First Sighted Data gathered from phonological observation conducted by Kanazawa Local Meteorological Observatory. Listed dates are from sightings recorded in the vicinity of the observatory.

Why survey swallows?

In the 1970s, as Japan was undergoing rapid economic growth, there were concerns that the country would lose much of its natural environment due to air pollution, water pollution, and overexploitation of natural resources.

At this critical juncture, Ishikawa Prefecture decided to have children learn about Ishikawa's natural environment by surveying swallows.

Swallows are migratory birds and flourish in Japan from spring to summer, migrating to Southeast Asia in the winter. People often associate the arrival of swallows in late March and April with the arrival of spring. Many believe that these birds bring happiness and welcome them into their homes, treating them like a member of the family. These wild birds have also been treasured for many years and are known as beneficial birds because they feed on the pests that destroy rice crops.

Many swallows build their nests in and outside of houses and outdoor sheds, where there are insects to feed on and plenty of mud and grass for nest building. Nesting grounds are often around places where children like to play, so it is relatively easy for them to find and observe swallows in their natural habitat. Children can also talk with the people living in places where swallows make their nests. As such, when they conduct their surveys, they have the opportunity to learn more about their local community as well.

The status of swallows is also a measure for the status of the natural environment in Ishikawa Prefecture.

With the above reasons in mind, the prefecture has had students conduct this general survey of swallows for many years.

Overview of the Survey

- Aims of the Survey

  The survey attempts to afford students the chance to observe the environment around their homes, develop a caring heart for nature, and stimulate an interest in living things.

- Target Area

  The neighborhoods in the vicinity of the 225 public elementary schools in Ishikawa Prefecture (excludes remote uninhabited areas in the mountains)

- Period of Survey

  One-week period from May 10 to May 16, also known as Bird Week in Japan

- Content of Survey

  Students count the number of adult swallows, the number and location of nests, and the number of old nests, and record their findings on a survey form (attached separately).

  In regard to the red-rumped swallow and the house martin, students only count the number of adult specimens, the number of in-use nests, and the number of old nests.

  During the survey, students also interview local residents about their opinions of swallows.

- Survey Method

  The area immediately surrounding each elementary school is divided into several sections, and surveyors are divided into groups and sent out to conduct their surveys during roughly the same time period. Each group of surveyors is made up of two to three students.

- Surveyors

  Sixth graders from all public elementary schools within the prefecture; about 13,000 students.

40 Years of Survey Results

Looking back on 40 years of survey data, we can see that there has been a one-third decrease in the number of adult swallow specimens in Ishikawa. There has also been about a 50 percent decrease in the number of in-use nests since 1989. (Refer to Attachment 2, Chart 1)

It can be argued that the results of the survey vary depending on each year's spring season as well as on the weather of the days that the students go out to conduct the survey. There are also reports of nests being built immediately after the survey period, and as such, we understand that this survey may not accurately reflect the entirety of the swallow population.

However, since this survey has been conducted continuously every year during the same time period, it is a valuable resource that can help us understand the patterns and shifts in the lives of swallows.

Swallows feed on insects that fly in the air. These insects spawn in rice paddies and areas with water, which makes them important to the swallows' feeding pattern. It can be predicted that a greater total area of rice paddies will lead to a higher population of swallows. The availability of buildings suitable for nest-building can also be predicted to be an important factor.

A variety of data, including the number of adult swallows, the number of in-use nests, the number of surveyors, the total area of rice paddies, the number of households, and more, has been organized into a chart. (Refer to Attachment 1, Chart 2)

From this chart, you can see that the change in the number of adult swallows seems to correspond with the change in the total area of rice paddies. The area of rice paddies in the prefecture has decreased by about 17,000 ha since 1972. With the decrease in insect-spawning rice paddies, there has also been a decrease in the food available to swallows. From this, we can speculate that there is a direct correlation between the decrease in rice paddies and the decrease in adult swallows.

During the first survey in 1972, the population of the prefecture was about 1 million and there were about 250,000 households. In 2011, the population was 1.17 million and there were 440,000 households. While there has been only a 17 percent increase in the population, there has been a 76 percent increase in the number of households. Since the increase in households is greater than the increase in population, it can be argued that while there has been an increase in the number of houses and residential complexes, there has been a decrease in the number of people per household.

Swallows can only build their nests if they are protected by people, so would seem that an increase in houses in the prefecture would provide the conditions for swallows to profligate. However, that is not the case.

There has been an increase in the number of homes that are empty during the daytime, and old-style Japanese houses (made of wood and with dirt floors in the entrance areas) are gradually being replaced with modern houses that have no eaves and that have walls made of harder material, making it difficult for birds to burrow through. Also due to a rise in the need for crime prevention, doors are now locked and left closed more often, leading to a decrease in the number of places available to swallows to build their nests.

The increase in natural enemies of swallows, such as crows, snakes, and cats, is also likely a factor contributing to the decrease in adult swallows.

Among these enemies, there is an increase in reports of victimization from crows. Crows attack fledglings and destroy incomplete nests, causing swallows to not return the next year.

Through this survey conducted in May, students gain an awareness of the importance of protecting swallows and begin to treat these birds as a part of their families.

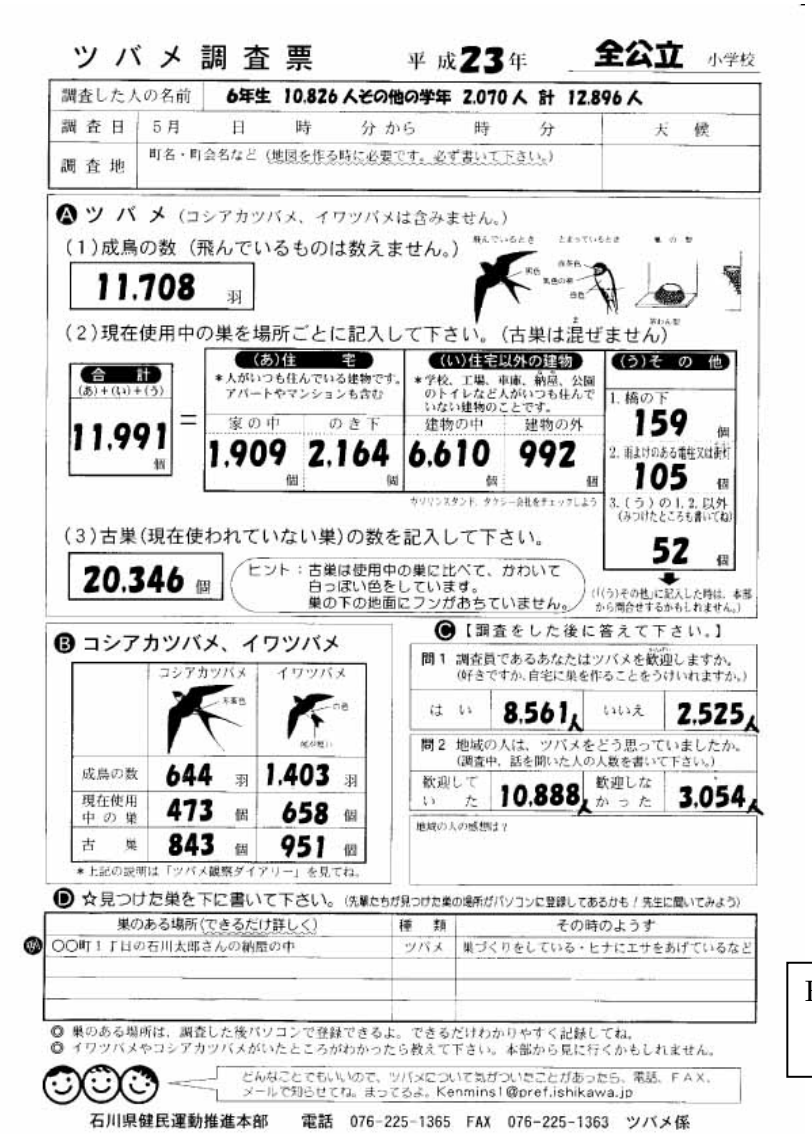
Why do swallows always come back to Ishikawa in the spring season? It is probably because there are many people here who are willing to house them and welcome them warmly into their homes, making it an easy place for swallows to live.

Ishikawa Prefecture plans to continue this survey for many more years to come.

After the Survey

After completing their survey, headquarters writes up a general reports which are then uploaded online where 40 years of data are available. Students also write down their thoughts and opinions on the survey, as well as what they learned through the process. All of this is compiled and entered into a contest; the best reports receive awards and are put on display.

Survey Form (Results from 2011)



ツバメ調査票　平成23年　全公立　小学校

調査した人の名前：6年生 10,826人 その他の学年 2,070人 計 12,896人

調査日：5月　日　時　分から　時　分　天候

調査地：町名・町会名など（地図を作る時に必要です。必ず書いて下さい。）

Ⓐツバメ（コシアカツバメ、イワツバメは含みません。）

（1）成鳥の数（飛んでいるものは数えません。）

11,708 羽

（2）現在使用中の巣を場所ごとに記入して下さい。（古巣は混ぜません）

合計 (あ)+(い)+(う)	(あ)住宅		(い)住宅以外の建物		(う)その他
	＊人がいつも住んでいる建物です。アパートやマンションも含む		＊学校、工場、車庫、納屋、公園のトイレなど人がいつも住んでいない建物のことです。		1. 橋の下 159 個 2. 雨よけのある電柱又は鉄塔 105 個 3.（う）の1, 2, 以外（みつけたところも書いてね） 52 個
	家の中	のき下	建物の中	建物の外	
11,991 個	1,909 個	2,164 個	6,610 個	992 個	

（3）古巣（現在使われていない巣）の数を記入して下さい。

20,346 個

ヒント：古巣は使用中の巣に比べて、かわいて白っぽい色をしています。巣の下の地面にフンがあちていません。

Ⓑコシアカツバメ、イワツバメ

	コシアカツバメ	イワツバメ
成鳥の数	644 羽	1,403 羽
現在使用中の巣	473 個	658 個
古巣	843 個	951 個

＊上記の説明は「ツバメ観察ダイアリー」を見てね。

Ⓒ【調査をした後に答えて下さい。】

問1 調査員であるあなたはツバメを歓迎しますか。（好きですか。自宅に巣を作ることをうけいれますか。）

はい	8,561人	いいえ	2,525人

問2 地域の人は、ツバメをどう思っていましたか。（調査中、話を聞いた人の人数を書いて下さい。）

歓迎していた	10,888人	歓迎しなかった	3,054人

地域の人の感想は？

Ⓓ☆見つけた巣を下に書いて下さい。（先輩たちが見つけた巣の場所がパソコンに登録してあるかも！先生に聞いてみよう）

巣のある場所（できるだけ詳しく）	種類	その時のようす
例 ○○町1丁目の石川太郎さんの納屋の中	ツバメ	巣づくりをしている・ヒナにエサをあげているなど

◎巣のある場所は、調査した後パソコンで登録できるよ。できるだけわかりやすく記録してね。
◎イワツバメやコシアカツバメがいたところがわかったら教えて下さい。本部から見に行くかもしれません。

どんなことでもいいので、ツバメについて気がついたことがあったら、電話、FAX、メールで知らせてね。まってるよ。Kenmins1@pref.ishikawa.jp

石川県健民運動推進本部　電話 076-225-1365 FAX 076-225-1363 ツバメ係

English Survey Form
See next page

Survey Form

Year 2011	Name of School 225	Names of Surveyors	12,896

Swallow Survey Results from 2011

Date of Survey	Date: May _____ Time: _____ : _____ to _____ : _____	Weather Condition
Site of Survey	Town/District/Neighborhood name (Make sure to fill this in. This information is necessary for charting bird sightings onto maps.)	

Swallow (do not include the red-rumped swallow or the house martin)

◎# of adult specimens (do not include birds in flight)

11,708

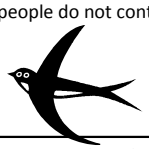
◎# of in-use nests according to location (Do not include old nests/nests not currently in use.)

Residence		Non-Residential Buildings		Other		Total
A residence is a building where someone continuously dwells. This includes apartment complexes.		This includes schools, factories, garages, outdoor sheds, park restrooms, etc., places where people do not continuously live.		1 Under bridges 2 Utility poles or street lamps with shelter from the rain 3 Places besides 1 and 2		
Inside Home	Under Eaves	Inside Building	Outside Building	1. 159 2. 105 3. 52	=	11,991
1,909	2,164	6,610	992			

* A residence is a building where someone continuously dwells.
* Non-residential buildings include schools, factories, garages, outdoor sheds, park restrooms, etc., places where people do not continuously live.
* "Other" refers to utility poles or bridges, etc.

◎Write down the number of old nests (nests not currently in-use)

20,346



Hint: Old nests are whiter and drier than in-use nests. Also, there should be no sign of bird droppings beneath old nests.

Red-Rumped Swallows & House Martins

	Red-Rumped Swallows	House Martins
# of adult specimen	644	1,403
# of in-use nests	473	658
# of old nests	843	951

＊Refer to the explanation about red-Rumped swallows andHouse Martins in the ovservation diary.

【Please answer after completing the survey】

Q1. As the surveyors, do you welcome swallows into your homes? (Do you like the birds? Do you allow them to build nests in and around your homes?)			
Yes	8,561	No	2,525
Q2. How many local residents welcomed the swallows into their homes? (Write down the number of people whom you heard from during the survey.)			
Welcomed the swallows	10,888	Did not welcome the swallows	3,054

☆Fill out information about nesting sites below. (Nesting sites may already be registered online from previous surveys. Please consult your teacher when filling this ou

	Nest site (be as specific as possible)	Type		What was the bird doing at the time?
Ex	Inside Mr. Taro Ishikawa's outdoor shed in A town	Swallow		Making a nest. / Feeding its young. / etc.

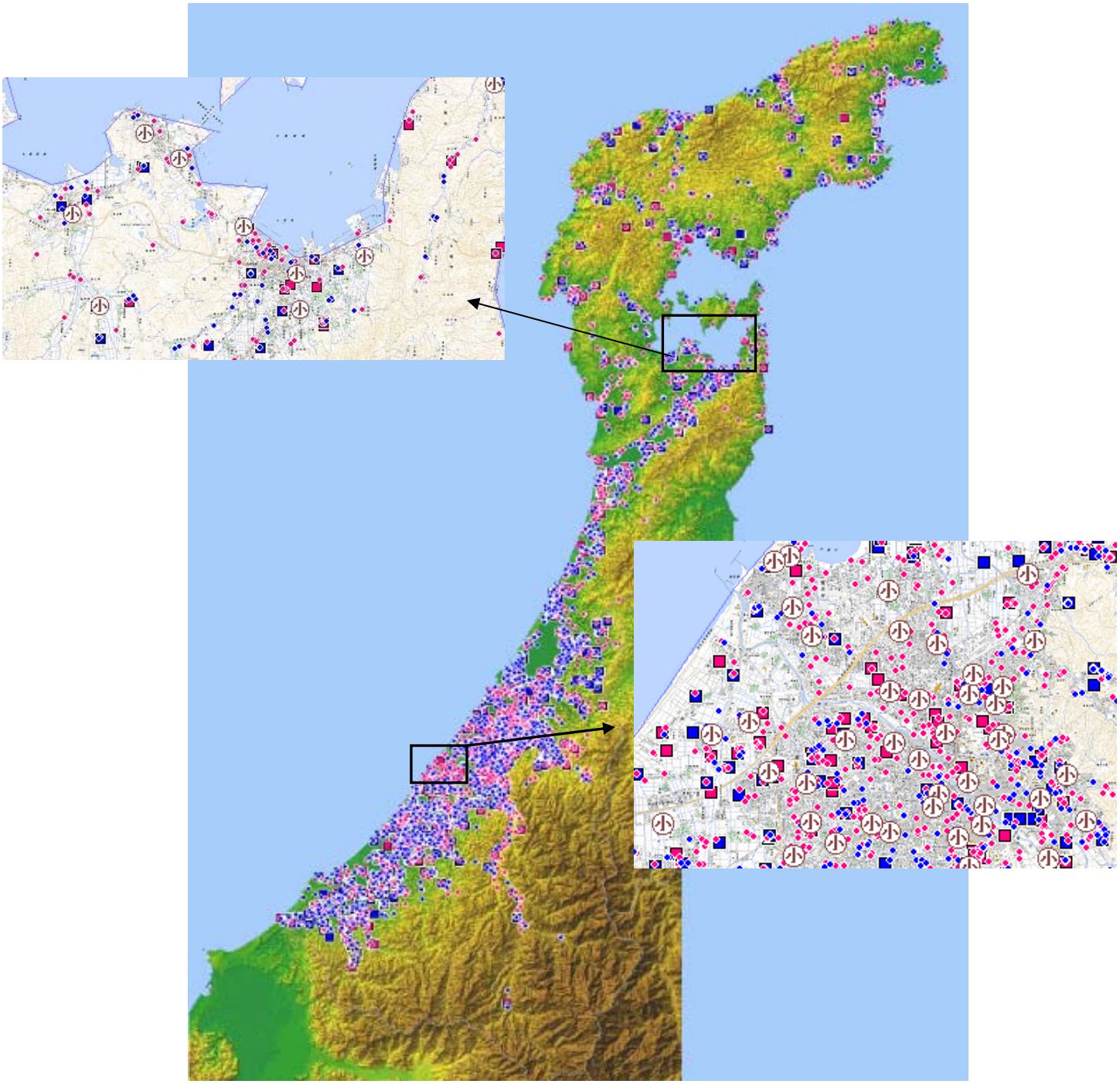
◎Nesting sites will be registered online after the survey period is over so please be as specific as possible in your survey report.
◎Please write down the locations of house martin and red-rumped swallow sightings. Headquarters may go to investigate.

If you notice anything about the swallows or have any concerns , feel free to contact us by telephone, fax, or e-mail. (kenmins1@pref.ishikawa.jp)

Ishikawa Prefecture Healthy Citizens Campaign Promotion Headquarters Tel: 076-225-1366 Fax: 076-225-1363 Swallow Survey Desk

General Survey on Swallows by Elementary School Students
Swallow Map

The map below marks the 7,229 nests for which we have confirmed location details.
These nests were found in Ishikawa Prefecture from 2008 to 2011.



Location of the 225 public elementary schools in Ishikawa Prefecture

Survey Year	Nests which Were newly confirmed to be in-use	In-use nesting places with confirmation of previous nest activity	Nests which were confirmed to be in-use and were registered	Total
2011	● 1,861	■ 433	● + ■ 2,294	7,229
2008 to 2010	● 4,494	■ 441	● + ■ 4,935	

Compiled in September 2011 by the Ishikawa Prefecture Healthy Citizens Campaign Promotion Headquarters