

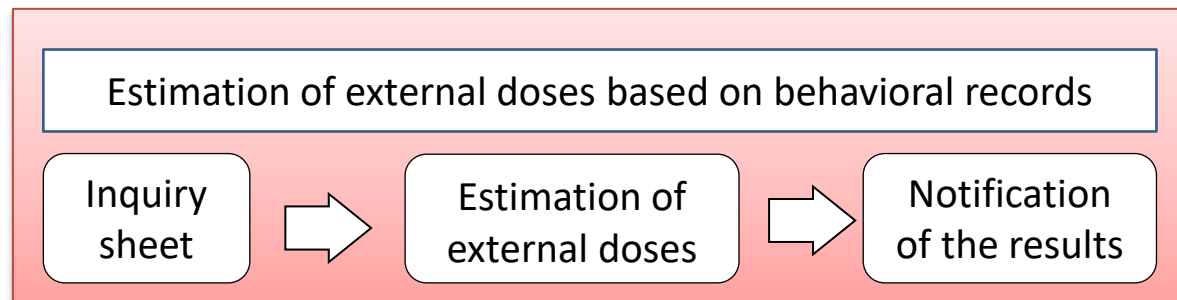
# Basic Survey: Purpose

**A survey to obtain data that is to serve as the basis for monitoring and protecting residents' health**

In order to estimate external doses, individuals were asked to keep and submit a record of their behavior.

Based on collected behavioral records for the four months from March 11 to July 11, 2011, each individual's external dose was estimated using the External Dose Estimation System developed by the National Institute of Radiological Sciences.

[Survey scheme]



Estimated results and the period for estimation are reported to participating individuals to let them know their own external doses, and at the same time, the obtained data are utilized in the Detailed Surveys and individuals' health management to be continued for the long term.

# Basic Survey: Outline

[Period for estimation]

Behavior during the four months from March 11 to July 11, 2011

[Coverage]

Approx. 2.06 million people

- Residents of the prefecture:

People with residence registration in the prefecture from March 11 to July 1, 2011

- People residing outside the prefecture:

- (1) People who were registered as residents in other prefectures but were residing in the prefecture from March 11 to July 1, 2011
- (2) People residing outside the prefecture who commuted to work or school in the prefecture from March 11 to July 1, 2011
- (3) People residing outside the prefecture who temporarily stayed in the prefecture from Mar. 11 to Mar. 25, 2011

(For people residing outside the prefecture, inquiry sheets were sent upon their request.)

# Basic Survey: Inquiry Sheets

There are two types of inquiry sheets: a detailed version and a simplified version.

## ● Detailed version (conventional version)

区分 年月日	滞在 場所	時 刻	地名・施設名
3/11 (金)	屋内	0 3 6 9 12 15 18 21 24	①自宅 ②車 ③会
	移動		
	屋外		
3/12 (土)	屋内		④車中(○ 中学校校 ⑤知人宅(△ 町字△
	移動		
	屋外		
3/13 (日)	屋内		⑥避難所(□ 中学校)
	移動		
	屋外		
3/14 (月)	屋内		⑦避難宿泊所(▽▽ 町▽▽温泉▽▽荘) ⑧
	移動		
	屋外		
3/15 (火)	屋内		⑨電車 ⑩知人宅(○ 市○市○市○)
	移動		
	屋外		

All respondents were asked to record the activities they conducted on an hourly basis for the period from March 11 to March 25, but the simplified inquiry sheet allows some respondents to summarize their behavior and only enter basic behavioral patterns for a certain period of time.

In November 2013, a simplified inquiry sheet was introduced.

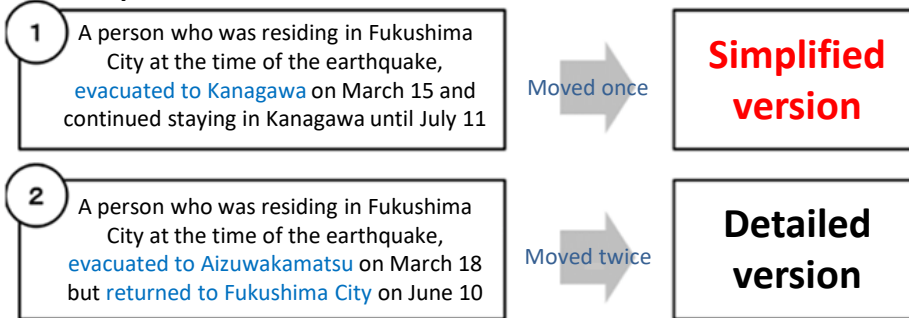
## ● Simplified version

期 間	滞 在 地 等
平成23年 3月11日	①この期間の居住地は、2ページで記載した住所と同じですか？ <input type="checkbox"/> 同じ (□表紙の住所 □3月11日の住民票住所 □現住所) <input type="checkbox"/> 異なる (下記ご記入ください。)
↓	都 道 市 区 区 町 府 県 郡 村
月 日	②居住地の近くでこの期間、平均的にみると屋外にいる時間は、 1日あたりどのくらいでしたか？ <input type="checkbox"/> 1時間 <input type="checkbox"/> 2時間 <input type="checkbox"/> 3時間 <input type="checkbox"/> 4時間以上 [ ] 時間
(行動パターン 大きく変わっ た場合は、その日 の活動を記入し、変 らなかった人 は7月11日と記入 してください。)	③定期的な外出先 (勤務先や学校など) はありましたか？ <input type="checkbox"/> いいえ (次の欄にお進みください) <input type="checkbox"/> はい (3ページと同じであれば、外出先と住所の記入は不要) 外出先施設名: _____ 都 道 市 区 区 町 府 県 郡 村
	③の外出先での滞在時間は、1日あたりどのくらいでしたか？ 屋内 [ ] 時間 屋外 [ ] 時間 外出する曜日は？(○で選択): 月・火・水・木・金・土・日
	④他にも、よく外出する先がありましたか？ <input type="checkbox"/> いいえ (次の欄にお進みください) <input type="checkbox"/> はい 外出先施設名: _____ 都 道 市 区 区 町 府 県 郡 村
	④の外出先での滞在時間は、1日あたりどのくらいでしたか？ 屋内 [ ] 時間 屋外 [ ] 時間 外出する曜日は？(○で選択): 月・火・水・木・金・土・日

### [Requirements for using the simplified inquiry sheet]

People who have experienced none or only one significant behavioral pattern change (such as a change of residence, school or workplace due to evacuation or moving) in the four months following the earthquake

### Examples



# Basic Survey: Analysis Methods (Behavioral Pattern Survey and Dose Rate Map)

## Behavioral pattern survey

Examine behavioral patterns based on inquiry sheets of the Fukushima Health Management Survey

### Survey period

Four months from March 11 to July 11, 2011

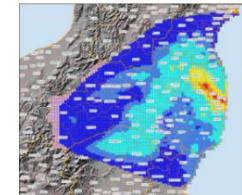
### Surveyed items

- Stays (places, hours and building structures)
- Moves (places and hours)

区分 月日	滞在 場所	時 刻						地名・施設名	
		0	3	6	9	12	15		18
記 入	屋内	①		④			④		①自宅 ②自宅の畑 ③車内 ④避難所
	移動		③						(〇〇市××中学校)□ ⑤〇〇市××町字△△
例	屋外		②(80分)			⑤(120分)			

## Dose rate maps

Prepare maps showing average daily effective dose rates based on data of SPEEDI and the Ministry of Education, Culture, Sports, Science and Technology (MEXT)



- March 12 to 14 Evaluation results by SPEEDI (effective dose rates)
- From March 15 onward Monitoring data released by MEXT (at that time) (ambient dose equivalent rates)

Convert ambient dose equivalent rates to effective dose rates by multiplying by 0.6

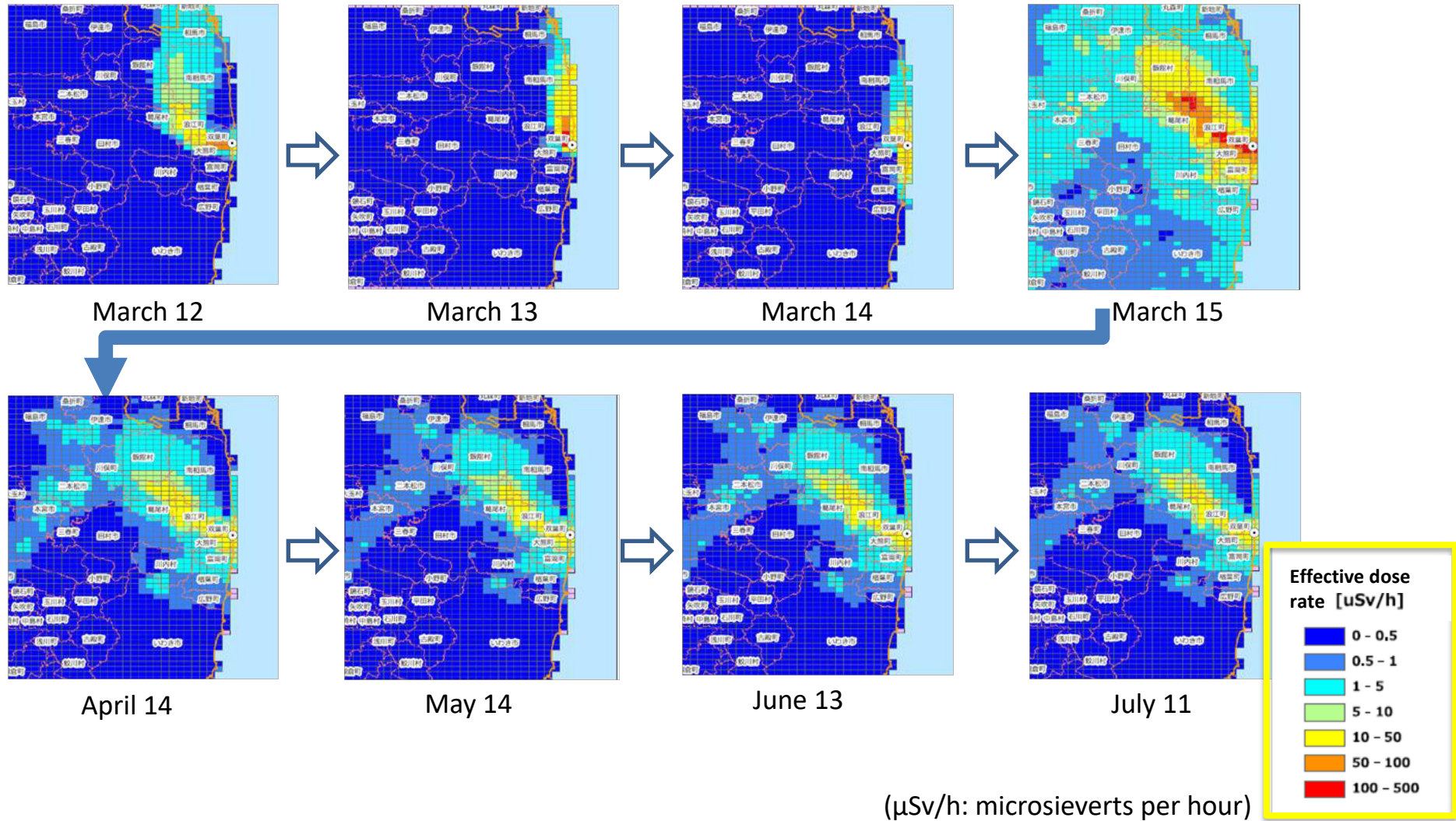
- Divide into 2 km × 2 km grids
  - Interpolate discrete data using software to create a map
- \* Values of natural radiation are not included.

Calculation of cumulative effective doses

Evaluate effective doses based on behavioral patterns and dose rate maps

# Basic Survey

## Basic Survey: Analysis Methods (Time-Series Dose Rate Maps)



Prepared based on the website of Fukushima Prefecture, "Estimation of External Doses (Outline of the External Dose Estimation System and Estimation Results by Model Pattern of Evacuation Behavior), National Institute of Radiological Sciences" (December 13, 2011)

# Basic Survey: Obtained Responses and Their Representativeness

The response rate was 27.7% for the entire Fukushima Prefecture.

However, as a result of the examination on the representativeness, the dose distribution based on the responses obtained so far in the seven districts in the prefecture was found to be unbiased and to properly represent that of respective districts.

Table 1

## Responses to the Basic Survey

As of March 31, 2022

Coverage		2,055,236	
Number of responses	Detailed version	493,938	24.0%
	Simplified version	75,250	3.7%
	Total	569,188	27.7%

\* Response rates are rounded off for each category.

Table 2

## Response rate by age group

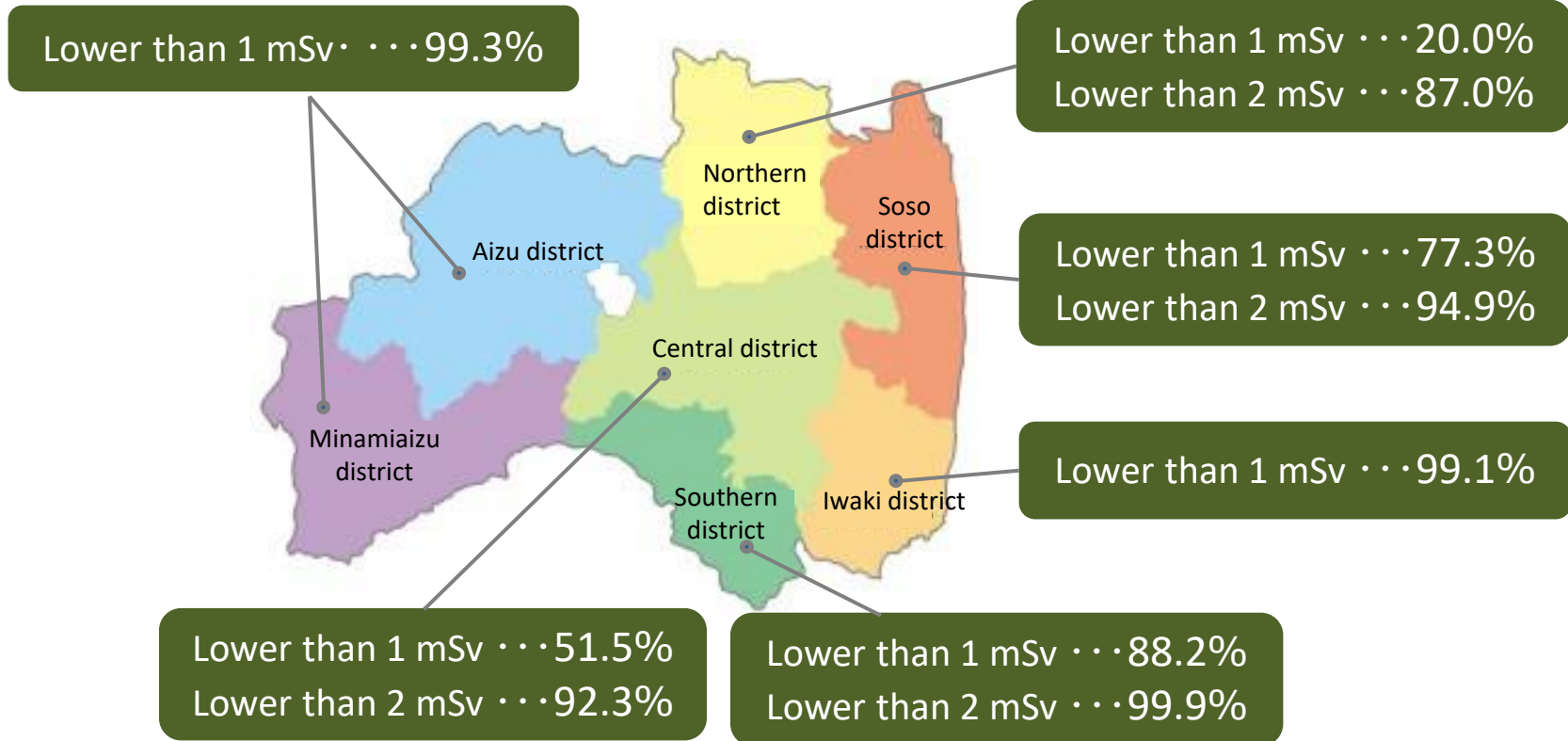
As of March 31, 2022

Age group	0~9	10~19	20~29	30~39	40~49	50~59	60~	Total
Response rate	46.7%	36.3%	18.2%	24.8%	22.5%	23.0%	27.9%	27.7%

\* Rates (%) are rounded off.

## Results of estimated external effective doses by district

(for 466,972 people excluding radiation workers)



## Evaluation of estimated effective doses

Past epidemiological studies have not confirmed clear health effects of radiation below 100 mSv. Therefore, the estimated external effective doses, though covering only four months, can be evaluated as values that are unlikely to show any health effects caused by radiation.