

# Kesennuma-Motoyoshi Area

## Kesennuma City and Minamisanriku Town

### Promotion of the fisheries industry and civil engineering works as a driving force for recovery

The Kesennuma-Motoyoshi area is located along a ria coast with a rich landscape and has a good natural sheltered harbor. The area has long prospered with the fisheries industry as the core industry. The harbor area also featured one of the leading aquafarms in Japan. The disastrous tsunami flooded as much as 28 km<sup>2</sup> of land in the area, causing tremendous damage to local communities. In fiscal years 2016 and 2017, the community rebuilding projects implemented in the first half of the recovery period continued, including raising land, promoting the collective relocation of citizens for

disaster control, and building of public housing for victims of the disaster, and all these projects have been completed.

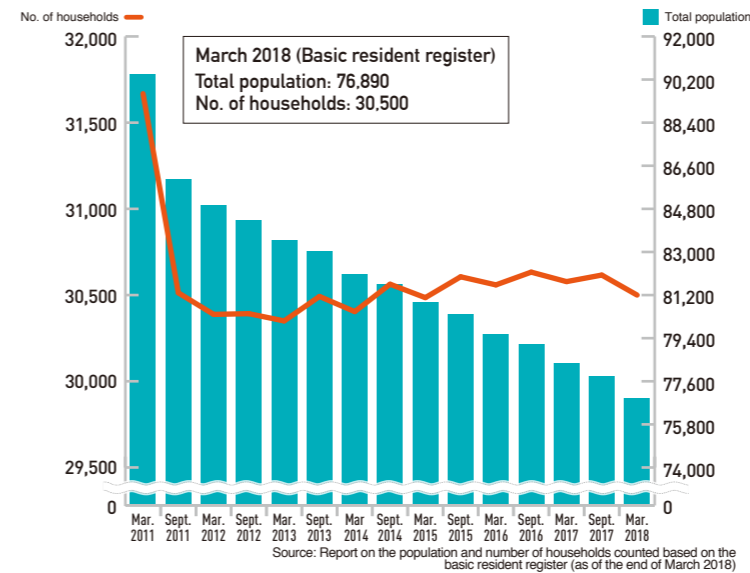
The Kesennuma City Hospital, which serves as a disaster base hospital, was reopened. Also, new childcare support facilities, such as those in Shishiori and support centers in Togura and Utatsu, as well as the Miyagi-Kesennuma government office, new Minamisanriku municipal office, and the Utatsu municipal branch office started operation to foster the establishment of inhabitant-friendly communities. Kesennuma City formulated the second master plan to make the city a nature-rich global city. Minamisanriku is designated to be a "biomass industry city" and is fostering environment-friendly community building by measures such as obtaining international certification for forestry

management.

For the fisheries industry, a new fish market is under construction, including a facility which visitors can tour equipped with an observation deck. In Mizushiri, Minamisanriku Town, the construction of a hatchery for chum salmon was completed. For the future-oriented recovery of the area as a fisheries base, the municipal government implemented a range of projects, including those linked with tourism.

In addition, the construction of the Sanriku Expressway was promoted to support logistics operations in the area. In the isolated island support project, a bridge was completed to connect Oshima, Kesennuma City to the mainland. A range of projects were thus implemented to drive local recovery from the disaster.

### Population and number of households in the Kesennuma-Motoyoshi area



### Damage caused to the area

#### Damage to people (as of March 31, 2018)

1,836 deaths	About 17% of the prefectural total	426 missing persons	About 35% of the prefectural total
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#### Damage to houses (as of March 31, 2018)

11,626 units completely destroyed	About 14% of the prefectural total	2,749 units seriously damaged	About 2% of the prefectural total
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#### Evacuation (during the peak period for the prefecture)

154 evacuation centers	About 12% of the prefectural total (As of 11:00 a.m. on March 15, 2011)	24,984 evacuees	About 8% of the prefectural total (As of 6:00 p.m. on March 14, 2011)
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#### Residents in temporary shelters (as of March 31, 2018)

618 people in prefabricated houses	About 21% of the prefectural total	200 people in private houses rented and provided by municipalities	About 5% of the prefectural total
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### Flooded areas

#### Observed values (Inundation height) of tsunami

Area	(m)	Investigation spot
Kesennuma	12.0	Around the promenade near Isuzu Shrine
Motoyoshi, Kesennuma City	13.0	Coast of Akasaki, Motoyoshi Town
Utatsu, Minamisanriku Town	14.7	Utatsu Station
Shizugawa, Minamisanriku Town	15.9	Tsunami evacuation center (building)

Third report on the tsunami caused by the 2011 earthquake off the Pacific coast of Tohoku (Japan Weather Association)

Legend  
Flooded area

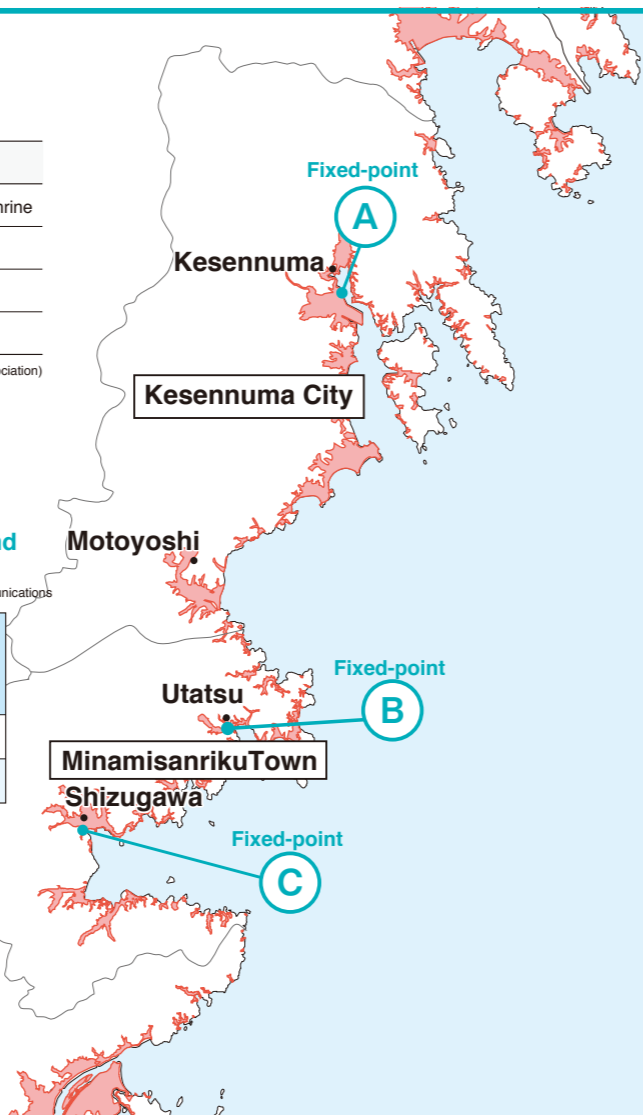
Geospatial Information Authority of Japan

#### Basic data about the disaster-afflicted municipalities and data about the damage caused to them

Source: Statistical Observations of Municipalities 2015. Statistics Bureau, Ministry of Internal Affairs and Communications

Area	Population <sup>*3</sup>	No. of households <sup>3</sup>	Total area (excluding the northern area and Takeshima) (km <sup>2</sup> )	Residential area (km <sup>2</sup> )	Flooded area (km <sup>2</sup> ) <sup>*1</sup>	Estimated population in the flooded area <sup>*2</sup>	Estimated no. of households in the flooded area <sup>*2</sup>
Kesennuma City	73,489	25,457	333	93	18	40,331	13,974
Minamisanriku Town	17,429	5,295	164	37	10	14,389	4,375

<sup>\*1</sup> Announced by the Geospatial Information Authority of Japan on Apr. 18, 2011  
<sup>\*2</sup> Announced by the Statistics Bureau, Ministry of Internal Affairs and Communications on Apr. 25, 2011  
<sup>\*3</sup> Results of the national census announced by the Statistics Bureau, Ministry of Internal Affairs and Communications on Oct. 1, 2010



### Restoration and recovery ( Fixed-point observation )

#### A Uoichiba-mae district, Kesennuma City



#### B Utatsu district, Minamisanriku Town



#### C Shizugawa district, Minamisanriku Town



# Ishinomaki Area

Ishinomaki City, Higashimatsushima City and Onagawa Town

## Creating new communities while keeping the memory of the disaster

The Ishinomaki area is a fertile land connected to the Sendai Plain and has one of the world's major three fishing spots off the coast of Sanriku. The area is home to companies engaged in agriculture, fishing and other industries. The area of land flooded by the tsunami totaled 113 km<sup>2</sup> in Ishinomaki. The flood caused damage to completely destroyed numerous buildings.

Ishinomaki City suffered severe damage and had the largest numbers of deaths and missing people among all municipalities afflicted by the disaster.

In consideration of the tremendous damage caused by the tsunami, the city implemented land raising and redevelopment projects as in the previous fiscal year and also fostered collective relocation and public housing construction projects for the creation of new communities. In the

Shinkadonowaki district in Ishinomaki City and Nobirugaoka district in Higashimatsushima City, citizens celebrated the launch of new communities.

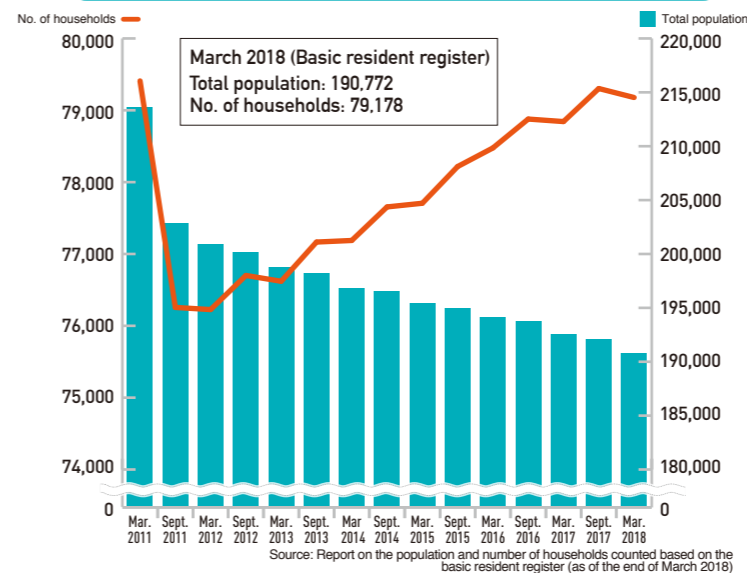
For the fisheries industry, which is the core industry in the area, the work to raise the sinking land was completed to promote the full recovery of related facilities. In Ayukawahama in Ishinomaki City, the facilities of the Marine Products Local Wholesale Market were completed in the Oshika district, including the sales floor and cold storage facility. The improvement of the local wholesale market in Onagawa Town was also completed.

The municipalities also worked to rebuild damaged public facilities. Ishinomaki City is transforming the branch office building into a complex that also serves as a disaster control center. Onagawa Town started the construction of its new office building on high ground. The municipalities also completed the construction of new school buildings, including those of Ogatsu

Elementary and Junior High Schools in Ishinomaki City and that of Miyanomori Elementary School and Naruse Mirai Junior High School in Higashimatsushima City.

Moreover, in the Minamihama district, Ishinomaki City in March 2017, a project was launched to establish a memorial park for victims of the Great East Japan Earthquake, including a memorial facility managed by the national government. Higashimatsushima City also completed a memorial park by preserving the former Nobiru Station platform as a relic of the disaster to remind people of the lessons learned from the tragedy. Ishinomaki City has decided to preserve the old buildings of Kadowaki and Okawa Elementary Schools. Onagawa Town finalized the plan to preserve the former building of the Onagawa police department as a relic of the disaster.

## Population and number of households in the Ishinomaki area



## Damage caused to the area

### Damage to people (as of March 31, 2018)

5,301 deaths	About 50% of the prefectural total	703 missing persons	About 57% of the prefectural total
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### Damage to houses (as of March 31, 2018)

28,486 units completely destroyed	About 34% of the prefectural total	18,956 units seriously damaged	About 12% of the prefectural total
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### Evacuation (during the peak period for the prefecture)

277 evacuation centers	About 21% of the prefectural total (As of 11:00 a.m. on March 15, 2011)	125,831 evacuees	About 39% of the prefectural total (As of 6:00 p.m. on March 14, 2011)
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### Residents in temporary shelters (as of March 31, 2018)

1,994 people in prefabricated houses	About 69% of the prefectural total	2,206 people in private houses rented and provided by municipalities	About 60% of the prefectural total
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## Flooded areas

### Observed values (Inundation height) of tsunami

Area	(m)	Investigation spot
Ogatsu, Ishinomaki City	15.5	Ogatsu branch office of Ishinomaki City
Onagawa Fishing Port	14.8	Local firefighting department building
Ayukawa, Ishinomaki City	7.7	The 77 Bank building
Myojin, Ishinomaki City	6.6	Former seafood factory located on the left bank of the Mogami River
Miyatojima, Higashimatsushima City	8.7	Wooden two-story private house in Tsukihama, Miyatojima

Third report on the tsunami caused by the 2011 earthquake off the Pacific coast of Tohoku (Japan Weather Association)

Legend  
Flooded area  
Geospatial Information Authority of Japan

### Basic data about the disaster-afflicted municipalities and data about the damage caused to them

Source: Statistical Observations of Municipalities 2015. Statistics Bureau, Ministry of Internal Affairs and Communications

Area	Population*3	No. of households*3	Total area (excluding the northern area and Takeshima) (km <sup>2</sup> )	Residential area (km <sup>2</sup> )	Flooded area (km <sup>2</sup> )*1	Estimated population in the flooded area*2	Estimated no. of households in the flooded area*2
Ishinomaki City	160,826	57,871	556	242	73	112,276	42,157
Higashimatsushima City	42,903	14,013	102	70	37	34,014	11,251
Onagawa Town	10,051	3,968	66	10	3	8,048	3,155

\*1 Announced by the Geospatial Information Authority of Japan on Apr. 18, 2011

\*2 Announced by the Statistics Bureau, Ministry of Internal Affairs and Communications on Apr. 25, 2011

\*3 Results of the national census announced by the Statistics Bureau, Ministry of Internal Affairs and Communications on Oct. 1, 2010

## Restoration and recovery ( Fixed-point observation )

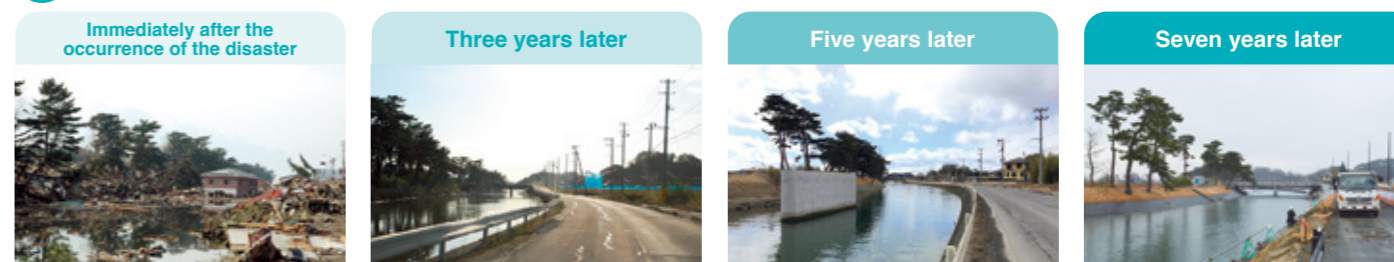
### A Ogatsu district, Ishinomaki City



### B Onagawahama district, Onagawa Town



### C Nobiru district, Higashimatsushima City



# Sendai Coastal Area

Sendai City, Shiogama City, Natori City, Tagajo City, Iwanuma City, Watari Town, Yamamoto Town, Matsushima Town, Shichigahama Town, and Rifu Town

## Expanding human exchange and promoting tourism while keeping the memory of the disaster and working for disaster control and mitigation

The Sendai coastal area has the Sendai Plain, which is the largest plain in Tohoku. The plain was developed by the sedimentation of earth and sand in the basins of the Natori and Abukuma Rivers. This area centering around Sendai is home to a range of industries. The tsunami flooded 186.5 km<sup>2</sup> of land in the area and Sendai City, including its inland districts, suffered the most serious damage among municipalities in Miyagi Prefecture in terms of the number of totally destroyed and seriously damaged houses. The tsunami also caused tremendous damage to agriculture by flooding farmland and agricultural equipment and facilities.

Under a project to support the lives of victims, train

operation was resumed between Soma and Hamayoshida on the JR Joban Line in December 2016. Yamashita Station and Sakamoto Stations were relocated by about 1.1 km from their original locations to inland areas and now have elevated buildings and tracks.

In Shichigahama Town, SCHICHI NO REOSRT, comprising a hotel and a café, was opened in the Hanabuchiham district in December 2017 for the promotion of human exchange and tourism in the area. Moreover, the Shobuta bathing resort resumed operation on a full scale in July 2017 after an interval of seven years. The festival held in June 2017 to pray for the full recovery from the disaster and for the souls of victims of the disaster attracted a total of 452,000 people over the two days and the festival brought about the economic effect of 4,470 million yen.

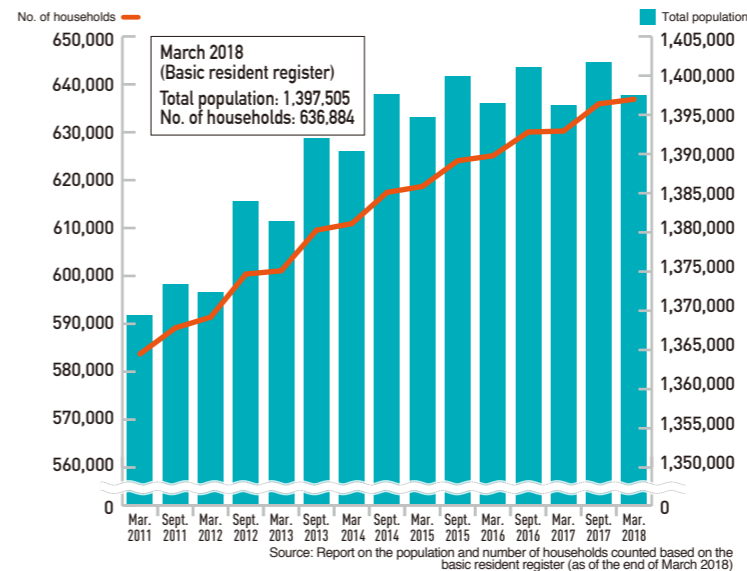
In Shiogama City, a new fish market equipped with advanced hygienic management facilities was opened for the promotion of the fisheries industry while in

Natori City nine companies began conducting business at the seafood processing facilities established in the Yuriage district in 2016. The first shirasu (whitebait) festival was held at the facilities in 2017 to publicize shirasu as a specialty of the area, which is the northern limit for whitebait fishing in Japan.

In Shiogama City's project to establish facilities to promote recovery from the tsunami, a deck connecting Marine Gate Shiogama with the commercial facilities in front of Honshiogama Station was completed in April 2016. Subsequently, in July 2017, the tsunami damage control center which would serve as a temporary evacuation center in case of disaster was completed within the city.

As an activity to keep the memory and communicate the lessons learned from the disaster, Sendai City began to accept visitors to the remains of disaster-afflicted Arahama Elementary School in April 2017.

## Population and number of households in the Sendai coastal area



## Damage caused to the area

### Damage to people (as of March 31, 2018)

3,395 deaths	About 32% of the prefectural total	90 missing persons	About 7% of the prefectural total
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### Damage to houses (as of March 31, 2018)

41,546 units completely destroyed	About 50% of the prefectural total	124,923 units seriously damaged	About 81% of the prefectural total
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### Evacuation (during the peak period for the prefecture)

515 evacuation centers	About 39% of the prefectural total (As of 11:00 a.m. on March 15, 2011)	145,865 evacuees	About 45% of the prefectural total (As of 6:00 p.m. on March 14, 2011)
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### Residents in temporary shelters (as of March 31, 2018)

266 people in prefabricated houses	About 9% of the prefectural total	1,044 people in private houses rented and provided by municipalities	About 28% of the prefectural total
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## Flooded areas

### Observed values (Inundation height) of tsunami

Area	(m)	Investigation spot
Matsushima Port, Matsushima Town	3.1	Gate of Zuigan Temple
Shiogama Port	4.9	Side wall of the AEON Town shopping center
Yoshida Hanabuchi Port, Shichigahama Town	6.8	Hanabuchiham fishery cooperative
Port of Sendai-Shiogama Sendai Port District	7.2	Tree planted to the east of Sendai Station
Arahama, Wakabayashi district	9.4	By the public restroom near the coast
Yuriage, Natori City	9.1	Window frame on the 2nd floor of a building near the fishing port
Ninokura, Iwanuma City	8.8	Two-story public pool facility in Ninokura
Arahama, Watari Town	7.7	Torinomu Park

Third report on the tsunami caused by the 2011 earthquake off the Pacific coast of Tohoku (Japan Weather Association)

### Basic data about the disaster-afflicted municipalities and data about the damage caused to them

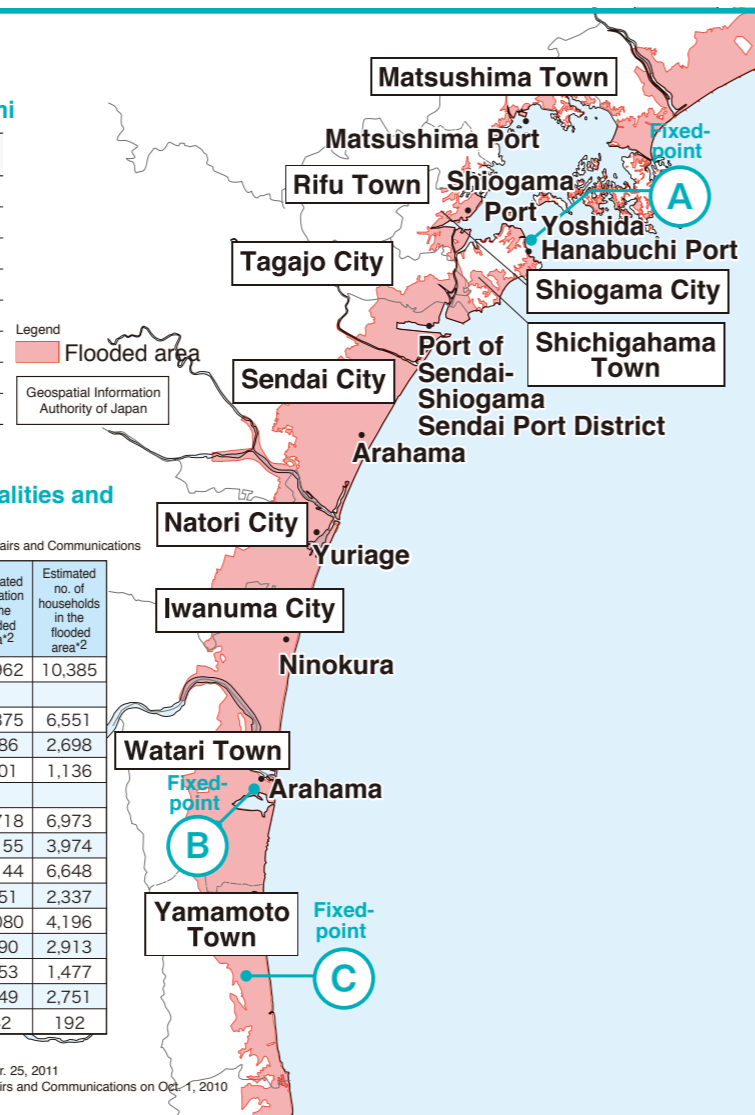
Source: Statistical Observations of Municipalities 2015. Statistics Bureau, Ministry of Internal Affairs and Communications

Area	Population <sup>1</sup>	No. of households <sup>3</sup>	Total area (excluding the northern area and Takeshima) (km <sup>2</sup> )	Residential area (km <sup>2</sup> )	Flooded area (km <sup>2</sup> ) <sup>1</sup>	Estimated population in the flooded area <sup>2</sup>	Estimated no. of households in the flooded area <sup>2</sup>
Sendai City	1,045,986	465,260	784	339		29,962	10,385
Aoba Ward	291,436	144,125	302	95			
Miyagino Ward	190,473	85,925	58	54	20	17,375	6,551
Wakabayashi Ward	132,306	58,914	48	46	29	9,386	2,698
Taihaku Ward	220,588	91,526	228	71	3	3,201	1,136
Izumi Ward	211,183	84,770	147	72			
Shiogama City	56,490	20,396	18	15	6	18,718	6,973
Natori City	73,134	25,124	100	71	27	12,155	3,974
Tagajo City	63,060	24,079	20	19	6	17,144	6,648
Iwanuma City	44,187	15,519	61	47	29	8,051	2,337
Watari Town	34,845	10,903	73	61	35	14,080	4,196
Yamamoto Town	16,704	5,235	64	43	24	8,990	2,913
Matsushima Town	15,085	5,137	54	26	2	4,053	1,477
Shichigahama Town	20,416	6,415	13	11	5	9,149	2,751
Rifu Town	33,994	10,818	45	20	0.5	542	192

<sup>1</sup> Announced by the Geospatial Information Authority of Japan on Apr. 18, 2011

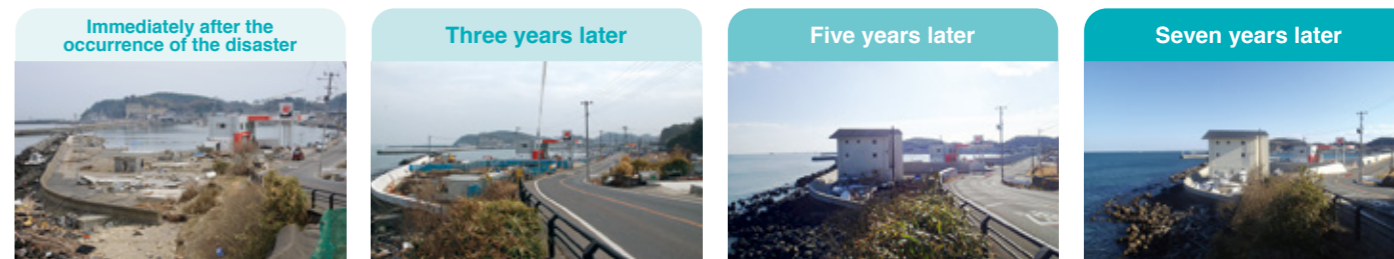
<sup>2</sup> Announced by the Statistics Bureau, Ministry of Internal Affairs and Communications on Apr. 25, 2011

<sup>3</sup> Results of the national census announced by the Statistics Bureau, Ministry of Internal Affairs and Communications on Oct. 1, 2010



## Restoration and recovery ( Fixed-point observation )

### A Yoshida Hanabuchi Port district, Shichigahama Town



### B Arahama district, Watari Town



### C Sakamoto district, Yamamoto Town



By area  
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# Inland area

Shiroishi City, Kakuda City, Tome City, Kurihara City, Osaki City, Zao Town, Shichikashuku Town, Ogawara Town, Murata Town, Shibata Town, Kawasaki Town, Marumori Town, Taiwa Town, Osato Town, Tomiya City, Ohira Village, Shikama Town, Kami Town, Wakuya Town, and Misato Town

## Continuing the decontamination of contaminated soil and management of the temporary storage area for contaminated soil, while completing the housing project for evacuees

In the inland area, 24 public housing units were completed in the Hasamanishi Oami second district in July 2016, and the housing project in the inland area was completed.

For the Tome-Shizugawa road under construction along the coast of Sanriku under the leadership of the Ministry of Land, Infrastructure, Transport and Tourism, the Tome Towa IC - Mitakido IC section was opened in April 2016, which will propel the recovery of the coastal area.

As for road improvement, Ubagafutokoro tunnel construction work was started in December 2015 on the Iwanuma-Zao section. This important road section connects the Iwanuma and Natori districts with the inland area in the south of the prefecture and with Yamagata. The tunnel will also be used for water supply.

At the end of March 2015, Marumori Town, which is adjacent to Fukushima Prefecture, completed the decontamination of soil and others contaminated due to the nuclear accident at Tokyo Electric Power's Fukushima Daiichi Nuclear Power Station. At the temporary storage areas for contaminated soil established at 25 locations in the town, the municipal government continues appropriate management by measuring air radiation dose rates. Shiroishi City

completed the decontamination project in March 2017.

In the inland area, a range of drills were conducted according to local situations. In Shiroishi City, voluntary disaster control organizations and local resident associations conducted various drills based on their own created scenarios, making use of the "safety confirmation flag" distributed in the city in 2015. With regard to the evacuation plans of municipalities located within 30 km from Tohoku Electric Power's Onagawa Nuclear Power Station, Wakuya Town and Misato Town formulated measures against nuclear accidents in fiscal 2015 and Tome City in June 2016. Wakuya Town, Misato Town and Tome City also conducted drills to prepare against nuclear accidents.

## Damage caused by the disaster

### Takashimizu district, Kurihara City



Up to seismic intensity 7 was recorded in Kurihara City and municipal facilities, including the Takashimizu branch office, were damaged.

### Towa district, Tome City



Due to the earthquake, the slopes of the baseball field and tennis court collapsed in the Towa athletic park.

### Wakuya district, Wakuya Town



After the occurrence of the disaster, the supply of water was suspended, and many people waited in line for supply from a water wagon.

### Enda district, Zao Town



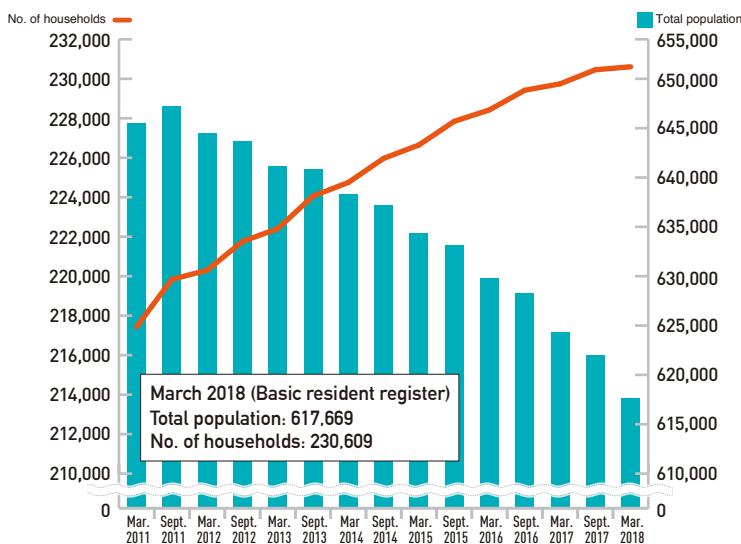
The earthquake caused the liquefaction of the ground and the ejection of manholes across the district.

### Shichikashuku Town



The earthquake caused serious damage to the road, including the collapse of slopes on the prefectural road connecting Shiroishi City with Shichikashuku Town.

## Population and number of households in the inland area



## Damage caused to the area

### Damage to people (as of March 31, 2018)

33 deaths	About 0.3% of the prefectural total	5 missing persons	About 0.4% of the prefectural total
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### Damage to houses (as of March 31, 2018)

1,346 units completely destroyed	About 2% of the prefectural total	8,502 units seriously damaged	About 5% of the prefectural total
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### Evacuation (during the peak period for the prefecture)

377 evacuation centers	About 28% of the prefectural total (As of 11:00 a.m. on March 15, 2011)	24,205 evacuees	About 8% of the prefectural total (As of 6:00 p.m. on March 14, 2011)
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### Residents in temporary shelters (as of March 31, 2018)

0 people in prefabricated houses	0% of the prefectural total	228 people in private houses rented and provided by municipalities	About 6% of the prefectural total
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