

IOC/UNESCO Bulletin No. 20
As of 14 April 2011

Casualties by the Earthquake and Tsunami

The National Police Agency

as of 10:00Z 14 Apr 2011

Death Toll 13,498

Missing 14,734

Number of Evacuees in the evacuation
shelter

Hokkaido 734

Aomori 887

Iwate 44,821

Miyagi 47,383

Akita 539

Yamagata 1,732

Fukushima 24,809

Tokyo 952

Ibaragi 745

Tochigi 1,040

Gunma 2,879

Saitama 3,458

Chiba 1,149

Kanagawa 458

Niigata 4,919

Yamanashi 834

Nagano 1,016

Shizuoka 760

Total 139,115

Tsunami damages *(Blue part is new)*

C: City, T: Town, V: Village

Local G: Information is taken from web of each municipality

Only municipalities located along Pacific coast are listed in the table. Information is taken from web site of each Prefecture.

City (C), Town (T) and Village (V) are listed from north to south of each Prefecture.

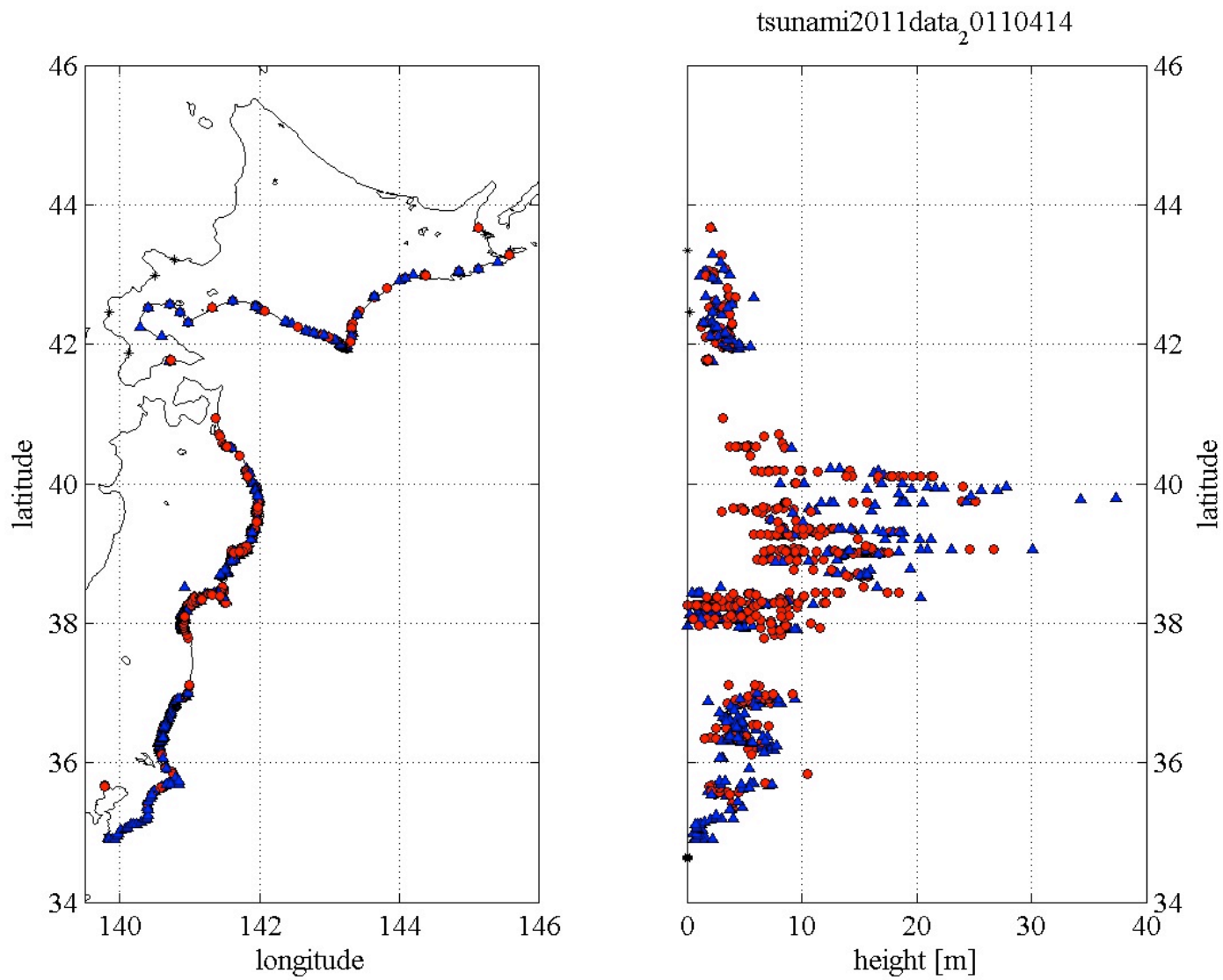
Prefecture	City, Town, Village & Total Population	dead	missing	Note: Tsunami related disaster (Whole area / inundation area in km²) Number of inundated houses AF: Above floor level BF: Below floor level (about 50 cm)
Hokkaido	Hakodate C 294,264	1		<ul style="list-style-type: none"> Hakodate harbor: 1.8 – 2.0 m Sumiyoshi port: 2.0 m
				<ul style="list-style-type: none"> Mori, Oshima: 2.0 m Mukawa, Iburi: 2.6 – 2.9 m Shizunai (Shin-Hidaka), Hidaka: 1.7 m Urakawa, Hidaka: 3.4 m Samani, Hidaka: 3.7 m Fuyushima, Samani, Hidaka: 1.8 m Asahi, Samani, Hidaka: 3.5 m Fuema, Urakawa, Hidaka: 4.1 m Erimo, Hidaka: 4.5 m Utabetu, Urakawa, Hidaka: 3.5 m Tokachi, Hiroo: 4.0 m
Aomori	Rokkasho V			<ul style="list-style-type: none"> 3.4 m
	Misawa C 42,226	2		AF: 15 BF: 12 <ul style="list-style-type: none"> Itsukawame: 7.9 m
	Oirase T			<ul style="list-style-type: none"> Ichikawa port: 8 m
	Hachinohe C 241,308	1	1	305 / 2 <ul style="list-style-type: none"> Near Hachinohe: 8 – 9 m Shirahama beach: 8.7 m, 9.3 m(run-up) AF: 1,600
	Hashikami T 14,627			94 / 0.5 <ul style="list-style-type: none"> Oojya: 8.4 m AF: 6 BF: 1
Iwate	Hirono T 17,961	0	0	303 / 1 <ul style="list-style-type: none"> Taneichi-kaihin park: 5.5 m AF: 2 BF: 8

	Kuji C 36,651	2	2	623 / 4 <ul style="list-style-type: none"> Kuki port: 18.6 m AF: 396 BF: 175
	Noda V 4,639	37	0	81 / 2 <ul style="list-style-type: none"> Noda port: 17 m (run-up)
	Fudai V 3,094	0	1	70 / 0.5 <ul style="list-style-type: none"> Tsukuehama: 28m (run-up)
	Tanohata V 3,836	14	24	<ul style="list-style-type: none"> Shimanokoshi: 27 m (run-up)
	Iwaizumi T 10,693	6	0	993 / 1 <ul style="list-style-type: none"> 40 houses are flooded
	Miyako C 59,118	401	682	1,260 / 9 <ul style="list-style-type: none"> Tarou district: Seawall of the coastal side was destroyed. Tsunami over the seawall and inundated urban area. The roof of the 4th floor building near the coast is damaged by tsunami. Run-up heights were 19.5m, 25.5m and 24.7 m. (<i>the detail information on Tarou is introduced at the end of this report.</i>) Koborinai fishing port: 37.88 m http://www.pref.iwate.jp/~hp0563/contents/gyokouichiran/gyokou/1310380koborinai.html
	Yamada T 18,745	533	378	263 / 4 <ul style="list-style-type: none"> Port: 9.5 m (seawall height: 6.2 m), and run-up is 10.0 m.
	Otsuchi T 15,293	610	1,006	201 / 4 <ul style="list-style-type: none"> Run-up; 12 – 19 m
	Kamaishi C 39,294	713	593	441 / 7 <ul style="list-style-type: none"> Kamaishi harbor: 7 – 9 m
	Ofunato C 40,801	289	205	323 / 6 <ul style="list-style-type: none"> Ryouri-Shirahama: 23.60 m (run-up) Okirai: 17.3m
	Rikuzen-Takata C 23,243	1256	1,203	232 / 9 <ul style="list-style-type: none"> Coastal area: inundation height: 14 – 15 m, run-up height: 17 – 19 m Only large RC buildings; with 5th floor, are remained
Miyagi	Kesenuma C 73,239	730	1,408	333 / 15 <ul style="list-style-type: none"> Koizumi primary school: 16.06 m (run-up) Akaushi, Motoyoshi: 22.2m
	Minami-Sanriku T	451	639	164 / 7

	17,382			<ul style="list-style-type: none"> Evacuation building: 15.50 m
	Ishinomaki C 160,336	2,750	2,770	556 / 40 <ul style="list-style-type: none"> Ogachi-machi: 16 m (run-up)
	Onagawa T 9,965	425	1,079	<ul style="list-style-type: none"> Onagawa port: 18.4 m (run-up)
	Higashi-Matsushima C 42,859	937	776	102 / 36
	Matsushima T 16,193	2	7	54 / 2
	Rifu T 9,768	1	0	45 / 0.5
	Shiogama C 56,325	21	2	18 / 5 <ul style="list-style-type: none"> Shiogama-kouku: 4 m
	Shichigahama T 20,377	60	13	13 / 6 <ul style="list-style-type: none">
	Tagajyo C 62,881	181	12	20 / 6
	Sendai C 1,046,902	569	Under survey	Tsunami height by PARI <ul style="list-style-type: none"> Sendai-shiogama: 9.9 m (run-up)
	Sendai-Miyagino			58 / 20
	Sendai - Wakabayashi			48 / 29 <ul style="list-style-type: none"> Arahama: 9.38 m
	Sendai- Taihaku			228 / 3
	Natori C 73,576	873	1,000	100 / 27 <ul style="list-style-type: none"> Near Sendai airport: 12 m
	Iwanuma C 43,921	168	15	61 / 29
	Watari T 34,773	247	37	73 / 35 <ul style="list-style-type: none"> Torinoumi-kouen: 5 – 8 m
	Yamamoto T 16,695	620	168	64 / 24 <ul style="list-style-type: none"> Major tsunami attacking around 06:30 Z
Fukushima	Shinchi T 8,306	89	29	46 / 11
	Souma C 37,919	408	Un- known	198 / 29 <ul style="list-style-type: none"> Isobe district: 7 – 8 m. Houses are completely destroyed

	Minami-Souma C 70,971	437	1,037	399 / 27 Evacuation area (partially)
	Namie T 20,686	3	183	Missing: only from 3 districts; other area are not surveyed yet Evacuation area (partially)
	Futaba T 6,917	16	16	Evacuation area
	Okuma T 11,264	16	8	Evacuation area
	Tomioka T 15,755	3	8	Evacuation area
	Naraha T 7,847	3	12	Evacuation area
	Hirono T 5,383	2	1	Evacuation area (partially)
	Iwaki C 345,310	295	82	• Sun Marina: 9.4 m (run-up) http://www.iwaki-sun-marina.co.jp/ Evacuation area (partially)
Ibaragi	Kita-Ibaragi C	5	1	• Hirakata: 7.2m & 7.32 m AF: 419 BF: 142
	Takahagi C			AF: 8 BF: 17
	Hitachi C	0	0	• Kawarago: 5.75 m AF: 556
	Tokai V	4		
	Hitachinaka C			• Hiraiso-beach: 3.50 m AF: 142 BF: 45
	Oarai T 18,188	1		• Oarai port: 4.63 m AF: 260 BF: 256
	Kashima C			• Kashima port: 4.22 m and 5.45 m AF: 77 BF: 150
	Kamisu C			• Kashimako: 5.7m AF: 3 BF: 2
Chiba	Choshi C	0	0	• Tokawa: 5.3m AF: 32
	Asahi C	13	2	• Yasashigawa: 7.6m AF: 387 BF: 116
	Sousa C			AF: 7 BF: 19
	Yokoshiba-Hikari T			AF: 9 BF: 21

	Sanbu C	1		AF: 209 BF: 34
	Kujyukuri T			<ul style="list-style-type: none"> Katakai: 2.2m AF: 89 BF: 72
	Oami-Shirasato T			<ul style="list-style-type: none"> No tsunami damage
	Shirako T			
	Chousei V			
	Ichinomiya C	0	0	AF: 30 BF: 28
	Isumi C			<ul style="list-style-type: none"> Taitou: 4.2m AF: 6 BF: 13
	Onjyuku T			<ul style="list-style-type: none"> Onjyuku: 2.5m
	Katsuura C			<ul style="list-style-type: none"> Katsuura: 2.2 m
	Kamogawa C			<ul style="list-style-type: none"> Amatsu: 2.0 m
	Minami-Bousou C			<ul style="list-style-type: none"> Nemoto: 2.6 m
	Tateyama C			<ul style="list-style-type: none"> Mera: 2.0 m
	Chiba C			AF: 2
	Futsu C			AF: 4 BF: 3
	Kisarazu C			BF: 1
Shizuoka	Shimoda C 25,549			<ul style="list-style-type: none"> 13 houses; flooded



Preliminary Information; no tide correction. Red circle: inundation depth. Blue triangle: run-up height.

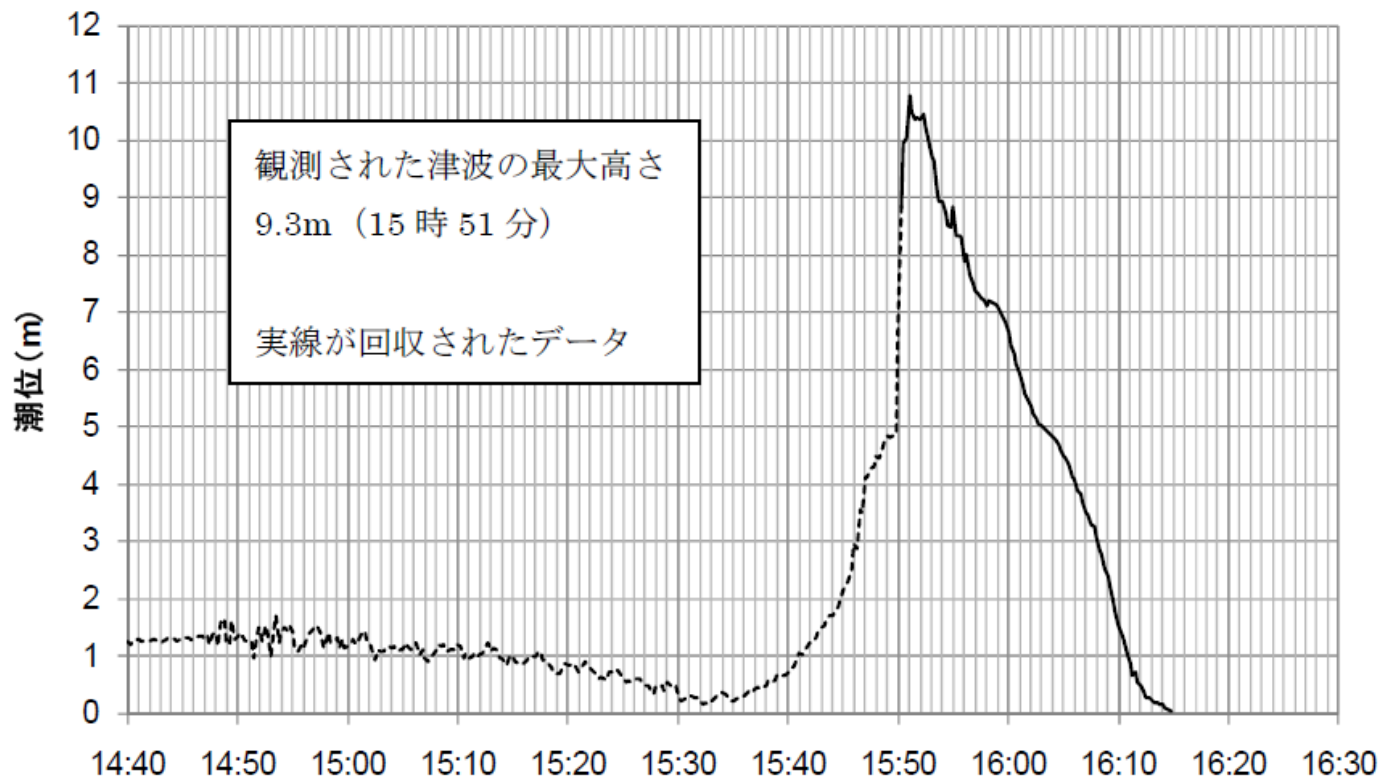
<http://www.coastal.jp/tsunami2011/>

Sea Level Data at Souma, Fukushima Pref.

Sea level data at Souma, Fukushima Pref.; operated by the Japan Meteorological Agency (JMA), stored at the site are recovered. Solid line in the figure shows the removed data, and dotted line shows the telemetered data. Maximum height is 9.3 m at 15:51 JST (06:51UTC) on 11 March 2011.

<http://www.jma.go.jp/jma/press/1104/13a/201104131600.pdf>

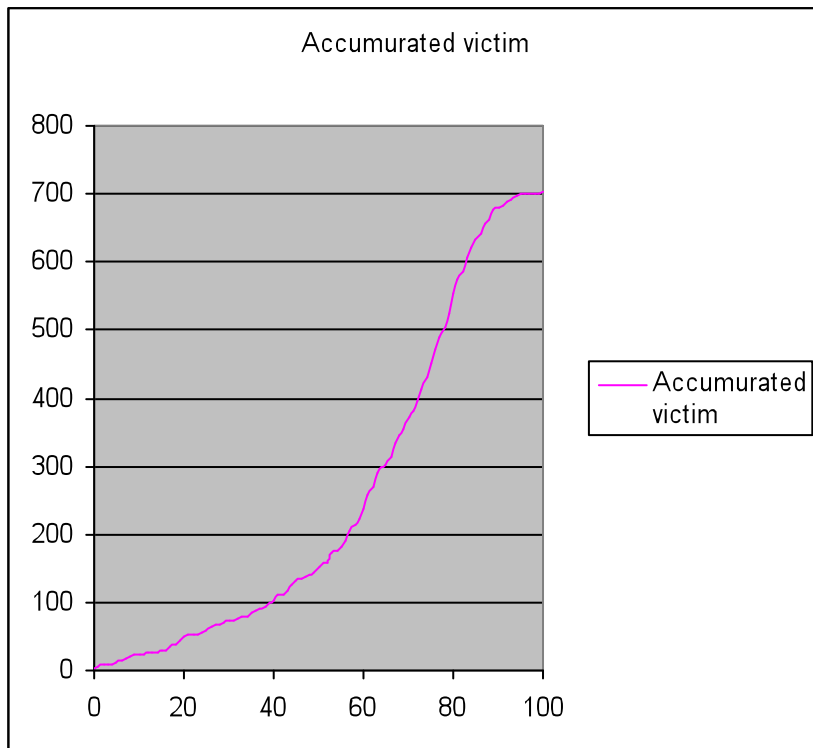
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Number of victims in Fukushima Prefecture.

Some speculation;

- Police of the Fukushima prefecture discloses the identified dead people; name, gender, age. Other police offices are also same.
- As of 12 March 2011, 702 people are listed up.
- Below figure shows the accumulated number of victims versus ages.
- The trend of the curve around or before 60 years old. This trend is similar with the case of Shichigahama-Town shown in No. 19 of this report.
- The earthquake and tsunami took place 14:46 PM of the weekday; Friday afternoon.
- Many people of younger generation; namely before 60 years old, may work in the offices, factories or in schools.



Statistics Bureau and the Director-General for Policy Planning of the Ministry of Internal Affairs and Communications released “Populations and Number of families within the Expected Inundation Areas” in Japanese.

<http://www.stat.go.jp/data/chiri/map/index.htm>

- Inundation areas are estimated by aerial and satellite photos; not the survey on site.
- The table in below is prepared by myself.
- 1st column: Name of city, town or village
- 2nd column: number of people who are living in the expected inundation area
- 3rd column: total number of dead and missing as of now; same with above table.
- 4th column: ratio of dead and missing in %
- Name of the Prefecture of the city, town and village

	Population within the inundated area (a)	Dead, Missing (b)	(a)/(b)x100	Pref.
Otsuchi	7,839	1,616	20.6	Iwate
Rikuzen-Takada	13,547	2,459	18.2	Iwate
Onagawa	8,816	1,504	17.1	Miyagi
Natori	12,132	1,873	15.4	Miyagi
Kamaishi	9,331	1,306	14.0	Iwate
Shiogama	173	23	13.3	Miyagi
Minami-Souma	13,919	1,474	10.6	Fukushima
Yamamoto	9,341	788	8.4	Miyagi
Minami-Sanriku	13,306	1,090	8.2	Miyagi
Yamada	11,721	911	7.8	Iwate
Kesennuma	29,648	2,138	7.2	Miyagi
Namie	2,749	186	6.8	Fukushima
Ishinomaki	102,670	5,520	5.4	Miyagi
Higashi-Matsushima	32,993	1,713	5.2	Miyagi
Souma	9,227	408	4.4	Fukushima
Miyako	24,937	1,083	4.3	Iwate
Tanohata	1,075	38	3.5	Iwate
Ofunato	15,500	494	3.2	Iwate
Futaba	1,061	32	3.0	Fukushima
Shinchi	4,258	118	2.8	Fukushima
Iwanuma	7,310	183	2.5	Miyagi
Okuma	1,053	24	2.3	Fukushima
Watari	13,186	284	2.2	Miyagi