

Marching together with local industries



Seaweed farming experience (Ofunato City)

Project 3

Fukko (reconstruction) Ecotourism

Ecotourism will be developed to create tourism that maximizes the enjoyment to be obtained from the unique features of the regions, such as natural environment and traditional way of life.

Such ecotourism resources as food, as in "fishing experience" run by small boat operators, and as guided tours in which the guides can pass on their personal accounts of the recent tsunami, are being considered. Another is to showcase the geology and fossils of the region in "Geotours". All of these will contribute greatly to the reconstruction.

Support will be provided for development of tour programs and guide training, information dissemination, setting of rules for sustainable use, so as to enable the region to operate its own independent ecotourism in the future.



Sappa boat tour

Project 4

Reconnecting the Forests, Rivers, Sea & Satoyama

Programs to increase public awareness of the importance of the role in lifestyle-sustaining natural environment, as manifested in the Forests, Rivers, Sea and Satoyama, along with nature restoration activities undertaken, at the same time, will reestablish the connectivity between the Forests Rivers, Sea and Satoyama.

Ecosystems* affected by the earthquake and tsunami, such as tidal flats and seagrass areas will be studied and monitored to assess their condition and potential for recovery, and the best approach for their protect and restoration will be considered taking into account the wishes of the people of the region.

In rural areas where the connectivity between nature and the people has declined, restoration will begin with nature restoration activities to bring back the ecosystems, following which ecotourism and environmental education will be introduced, to reestablish linkages with the forests, rivers, sea, satoyama, and the people, again of course taking into account requests from the region.

* Including new rich habitats affected by the tsunami and earthquake.



Brant Goose (*Branta Bemicla*)

Helping Nature Recover



Eelgrass (*Zostera marina*) beds diminished following the tsunami

Project 5

Promoting development of human resources who play a major role in sustainable society (ESD*)



Education for Sustainable Development in action

Human resources who can develop the region whilst maintaining harmony with nature, and who can pass on the knowledge of both the threats and blessings from nature will be created.

The capacity-building process will center on an understanding of the way nature functions, connectivity

between the forests, rivers, sea and satoyama, and the people's way of life, as well as disaster prevention in the face of threats from nature.

Knowledge will be gathered from people with first-hand experience of the disaster, which will be compiled into a base of knowledge and recommendations in the event of future disasters, and incorporated in Education for Sustainable Development (ESD) programs.



Enburi Festival (Hachinohe City)

※ Education for Sustainable Development. Study and activities to develop the individual's capacity to participate in building a sustainable society.

Project 6

Monitoring the Natural Environment

Keeping track
of the changes

The Natural Environment is not only the foundation of the people's lives in the region, but is also the basis of various approaches being undertaken in the reconstruction.

The impact of the recent tsunami and earthquake on the natural environment will be studied in terms of its affect on biodiversity and changes in the natural environment will be monitored over time. In addition record of prior tsunamis and other such events will compiled by examining "tsunami rocks" and other evidence of prior disasters.

In collaboration with the research community, a comprehensive archive of information on earthquakes and tsunamis will be produced and made available to the public so that the impact on the natural environment of tsunamis can be appreciated.



Tsunami rocks in Karakuwa Peninsula



Rocks thrown up from the sea floor by the tsunami

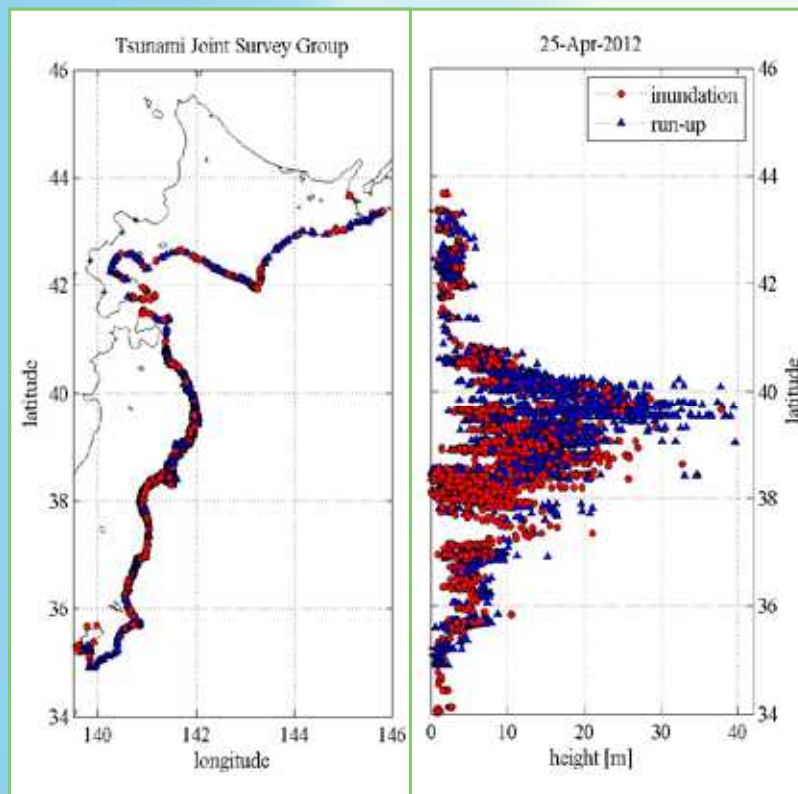
THE GREAT EAST JAPAN EARTH

Impact of the earthquake, tsunami and land subsidence.

Known as the Great East Japan Earthquake, the quake that occurred on March 11, 2011 had a magnitude of 9.0, making it the largest in recorded history in Japan, and the fourth largest in the world.

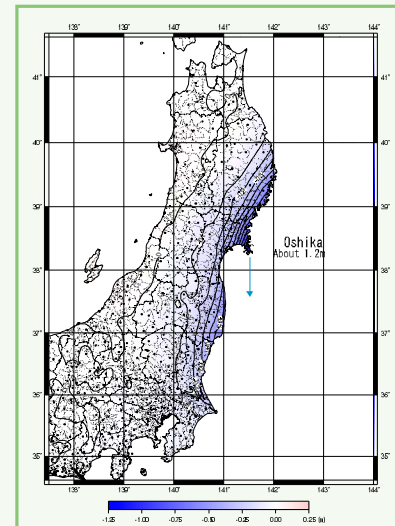
The huge tsunami struck the Pacific Coast of Japan, rising to as high 43 meters in (recorded in Kasagai Island), and causing massive deformations in the landscape, as observed in Oshika Peninsula which sank 1.2m and shifted 5.3m laterally towards the earthquake epicenter.

The height of tsunami caused by the Great East Japan Earthquake
(2011 Tohoku Earthquake Tsunami Joint Survey Group.
(<http://www.coastal.jp/ttjt/>) (2012/4/25))

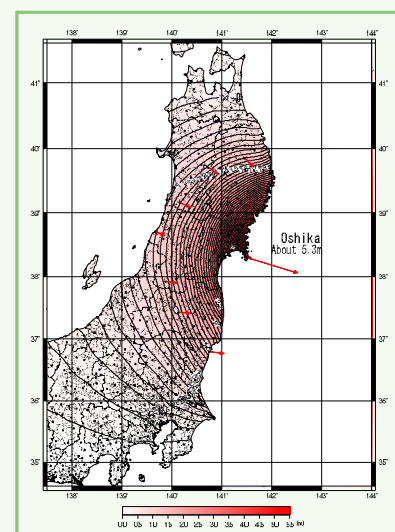


Inundation height:
Elevation of local water mark(from sea level at the time the tsunami struck)
Run-up height:
Elevation at landward edge of tsunami inflow(from sea level the moment the tsunami struck)

Ground deformations : Vertical movement
(Geospatial Information Authority of Japan)



Ground deformations : Horizontal movement
(Geospatial Information Authority of Japan)



Before and after the tsunami

Campsite in Rikuchukaigan National Park (Miyako City)



QUAKE

- 1 Fishing vessel left high and dry (Kesennuma City)
- 2 The "Solitary pine tree with hope", the only one to remain standing among tens of thousands on a beach inundated by the tsunami (Rikuzentakata City)
- 3 The base of the Hirota Peninsula where the tsunami swept across
- 4 Pine trees on the coast damaged by the tsunami
- 5 Amur adonis (*Adonis ramosa*)



Impact on the Natural Environment

Distinctive natural landscapes such as cliff faces, Rias Coasts, strangely-shaped rocks, and archipelagos were largely untouched by the tsunami/earthquake.

Sandy areas were reduced or disappeared altogether from some beaches. Impacts to ecosystems include severe disturbance to estuarine vegetation such as pines on sandy beaches, reed banks, tidal flats, sand dunes as well as to areas of Japanese Rose (*Rosa rugosa*), and Eelgrass beds.

In parts of the coastline that were submerged, rich new habitats are possibly emerging in such forms as tidal flats.

Impact on National Park Utilization

68 out of the total 121 facilities of the national park were damaged by the tsunami. Those damaged include campsites, public toilets, public grounds and walking trails.

Around 100, or almost half the total number of nature experience programs that offered immersive enjoyment of nature, such as sea kayaking, fisheries experience, and sea sightseeing were affected by the disaster.

Before and after the tsunami

Sendai Kaihin National Wildlife Protection Area (Gamo tidal flat) (Sendai City)

Even now, the landscape is still transforming: evidenced in eroding beaches and disappearing lagoons tidal flats.

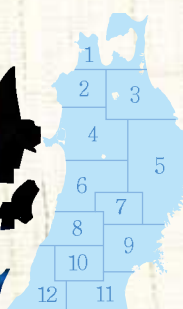


(Geospatial Information Authority of Japan)



The system of national parks has preserved and allowed citizens to visit areas of natural beauty and significance for 80 years. Drawing on this history of national park management, the government plans to reconstruct the national park in-line with the philosophy of 'green reconstruction'. It is important for the revitalization of the disaster area that the national park is reconstructed. By reconstructing the national park, people will be able to interact with nature and can learn about the beauty, power and potentially dangerous aspects of nature.

In this region, traditionally fishermen have venerated the god of the mountain. Similarly, the connection between the forest and the sea has been seen as important. Through interaction with nature as well as strengthening the connection between Forests, Rivers, Sea, and Satoyama ; each region's way of life, culture and traditions can be enriched. We strongly hope that green reconstruction activities will encourage other participatory local development action.



1. Hachinohe Sansha Grand Festival
2. Ichigoni
(Soup made of fresh sea urchin and abalone)
3. Dried persimmons
4. Aramakisake (Salted salmon)
5. Market
6. Hachinohe Senbei-Jiru
(Broth adding "Nanbu Senbei" crackers)
7. Soba-kakke (triangle-shaped buckwheat food)
8. Morning market
9. Landing Sanma(Pacific saury) in Kesenuma
10. Hachinohe Ramen
11. Female divers in Kuji
12. Mameshitogi
(Rice cake made of rice and green soybean)

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