



Annual Report 2012

Introduction



The NTNU University Museum encompasses the world around us!



In 2012, the NTNU University Museum stepped into the big wide world, in its work with leading mega-class international museums, including the British Museum in London, the Swedish National Museums of World Culture in Stockholm and a consortium of four museums in Australia. Working with international political authorities was also a new experience for us at the Museum. Bringing "Afghanistan – Hidden

Treasures" to Trondheim, in cooperation with the Afghan Ministry of Information and Culture, the Norwegian Embassy in Afghanistan, the Ministry of Foreign Affairs, the Ministry of Education and Research and key parliamentarians was also a big boost for the Museum.

The Afghanistan project contributed to invaluable training and new experiences, particularly in internal and external cooperation. Our professional network expanded globally, and the challenges we faced in our communication and marketing efforts raised our expertise level several notches.

One of the lessons we learned from this experience is that funding these kinds of events is a great challenge, one in which we were not entirely successful this time. The most important thing is that the project, with its strengths and weaknesses, gave the Museum and all its employees the experience of pulling together to solve a huge and overwhelming challenge that was a public success. That, in the long term, was our biggest achievement in 2012 and is what we will take with us into 2013 - and over the years to come.

Museum Director Axel Christophersen

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"Afghanistan – Hidden Treasures" boosted the Museum's visitor numbers to the highest ever in the last 15 years.



The exhibition made its mark on the city during the summer of 2012, here in a picture from the Trondheim Torg shopping mall.

Many of the Museum's employees contributed their time and expertise to the project. Here employees move a centuries-old snow leopard from the zoological collections into the spotlight.



Nearly two thousand years separated the oldest objects in the exhibition from the youngest objects, which included unique gold treasures, ivory carvings, glass figurines and bronze statuettes.



"Afghanistan – Hidden Treasures" exhibited 228 unique and valuable objects from the National Museum in Kabul. The oldest object was 4000 years old. Leena Aulikki Airola and her conservation colleagues were responsible for these irreplaceable objects.

"Afghanistan – Hidden Treasures"

The NTNU University Museum featured the exhibition "Afghanistan – Hidden Treasures" from 10 May – 2 September 2012. The international traveling exhibition has been shown in a number of the world's largest cities and museums since it began its travels in 2007. Trondheim was the only Norwegian city to be visited by the exhibition. The project was made possible through a partnership with the Ministry of Foreign Affairs, the Norwegian Embassy in Afghanistan, NTNU, private donations, and a substantial effort by the University Museum itself.

The University Museum made it a priority to put a great deal of its employee resources into the Afghanistan project, especially in the first six months of 2012. The project was guided by the Museum's director, and project management came from the Museum's Public Outreach Section.

All of the Public Outreach Section's employees were heavily involved in the project, including the planning and execution of exhibition design and a large number of events, dealing with the public and producing a catalogue for the exhibition. The Museum's conservation staff were responsible for extensive efforts in object handling and transportation planning, and staff from the Archaeology and Cultural

History Section contributed to the exhibitions on the Horg crucifix and the Kulfi coins. The Natural History Section contributed with side exhibits on cultivated plants and the snow leopard. The Museum's administrative staff made a considerable effort with HSE and security, communications and marketing, finances, IT and human resources.

The project generated two student projects, one master's project and several contributions at professional conferences and seminars. Almost 100 different stories and reports in the media helped to highlight NTNU and the University Museum in a positive way.

The marketing efforts for "Afghanistan - Hidden Treasures" were nominated for both the Robert Millar Award, which is given by Trondheim Marketing Association, and the European Excellence Awards, but did not reach the final rounds for the awards.

The project demonstrated that the University Museum has an organization that can work at a high level internationally. The project has contributed to a significant strengthening of our international relationships, networks and branding efforts. More than 21 000 visitors came to the exhibition.

Highlights



The NTNU University Museum secured start-up funding in 2012 to develop the Norwegian Barcode of Life (NorBOL) into a national infrastructure for DNA barcoding in Norway. The picture shows a blood drop butterfly (Zygaenidae family).



2012 was a top year for the School Services group, which welcomed nearly 13,000 children during the year. Many schools and pre-school groups also visit the Museum on their own.



The Museum conducted a comprehensive review of the Ringve Botanical Garden's physical plant in 2012. Moving into the newly renovated greenhouse was an important highlight for the garden's staff.

The Norwegian Barcode of Life (NorBOL)

The NTNU University Museum secured start-up funding in 2012 to develop the Norwegian Barcode of Life (NorBOL) into a national infrastructure for DNA barcoding in Norway. The principle behind the method is that short pieces of an unknown organism's genetic material, DNA, are compared to the DNA from known species in an openly available library. The "barcode" in the name refers to the similarity of the technique to retail barcodes, where every item has a unique barcode that can be read by a scanner.

The aim of NorBOL is to build an open library of DNA barcodes for all Norwegian species, thus providing a new tool for research and the management of biodiversity. The NorBOL network is comprised of 16 Norwegian institutions and is co-financed by the Norwegian Biodiversity Information Centre. The Centre's species project has supplied much of the material that has already been analysed in 2012.

A top year for school programmes

The Museum's School Services group develops outreach programmes designed for kindergartens and schools. The service provides programmes adapted to different school levels and to teachers' curricula for most of the Museum's permanent and temporary exhibitions. In 2012 the School Services staff welcomed a total of 12 930 children and students from 505 school groups and 36 preschools and kindergartens to different Museum arrangements, including at the Ringve Botanical Garden. Many school classes and kindergarten groups also visit the Museum on their own.

The Newton Energy Room is an advanced teaching space where grade 9 students can learn about different forms of energy. It is occasionally open to the public on the weekends. In 2012, Museum educators and teachers offered programmes to about 4000 students. The Trondheim Newton Energy Room is operated by the University Museum in collaboration with Statoil, the city of Trondheim, the Trondheim Science Centre, and FIRST Scandinavia.

Ringve Botanical Garden

Ringve Botanical Garden and its scientific collections form the foundation of the ambitious targets that the University Museum has set for outreach, collection activities, research and teaching in the garden.

In 2012, the Museum conducted a thorough analysis of the condition of the Ringve facility. Unfortunately, the analysis showed that the facility's value in 2012 was far below its actual potential.

The Ringve greenhouse has been renovated and was reopened for use in November 2012. The project, with a budget of NOK 9 million, was funded by NTNU, the garden's Friends' Society and from Ministry of Education and Research funds for the safeguarding of academic collections.

Visitor numbers showed a very positive trend, particularly in the number of organized tours of the garden, and for school programmes.

The figures speak

The Museum's revenues are generated from two primary sources: direct grants from the Norwegian Government and external projects funded by private and public sources. Other income includes grants from the Directorate for Cultural Heritage which fund archaeological investigations of marine, rock art and other archaeological sites protected under the Norwegian Cultural Heritage Act.

Government appropriations are relatively stable from year to year and are generally adjusted according to wage and price inflation. Larger variations in this funding from year to year are the result of individual grants for scientific equipment, staff recruitment or extraordinary security measures, for example.

Salaries and related personnel costs accounted for just under 60% of total costs, while other operating expenses amounted to 25%. Internal costs consist mainly of rent paid to NTNU, which in 2012 amounted to NOK 16.4 million.

The Museum is a public body that constantly tries to optimize the use of all available resources, including its financial, personnel and infrastructure resources.

The university's objective is to reduce old appropriations to a defined level. Until this goal is reached, budgets show the use of more resources than are actually covered by annual funding awards.

External revenues come from three sources, commissioned and collaborative projects and archaeological investigations that are conducted under the Norwegian Cultural Heritage Act, referred to as "public authority." Funding bodies such as the Research Council of Norway and the European Union provide partial or full funding of projects initiated by the NTNU University Museum. Commissioned activities are comprised of projects that are fully financed by the client, while the archaeological investigations conducted under the Cultural Heritage Act are funded by the developer.

The Museum's external revenues generally fluctuate more than government appropriations from year to year,

mainly because of variations in the scope and number of the statutory archaeological surveys and the extent to which the University Museum wins competitive grants and contract projects.

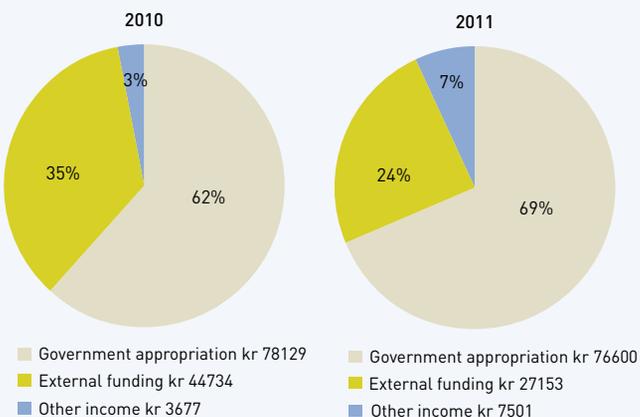
The NTNU University Museum had an increase in revenue from externally funded projects in 2012 after an abnormally low level in 2011. The revenue from projects financed by the Research Council of Norway has shown a general downward trend over the last three years, while the activity associated with other collaborative research projects varies to a greater extent. Income from commissioned projects and "public authority" increased significantly in 2012, although these figures did not reach 2010 levels reached

Revenues from "public authority" are dependent on the current economic situation and the Museum has little ability to influence the scope of this type of activity.

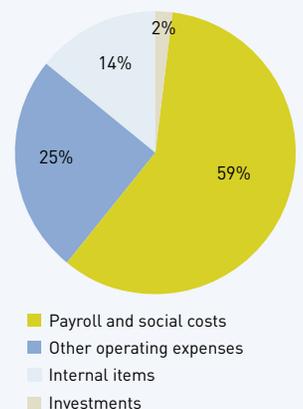
Income Statement

	(Amounts in NOK thousands)		
	2010	2011	2012
Income			
Government appropriation	78 129	76 600	80 225
External funding	44 734	27 153	41 760
Other income	3 677	7 501	7 082
Total income	126 540	111 254	129 067
Cost			
Investment	4 554	1 880	2 557
Payroll and social security costs	77 134	71 276	77 389
Other operating expenses	30 669	21 935	32 742
Change on-going projects	-758	-15	-556
Internal items	15 020	15 341	18 297
Total expenditures	126 619	110 417	130 429
Result for the year	-79	837	-1 362

Income



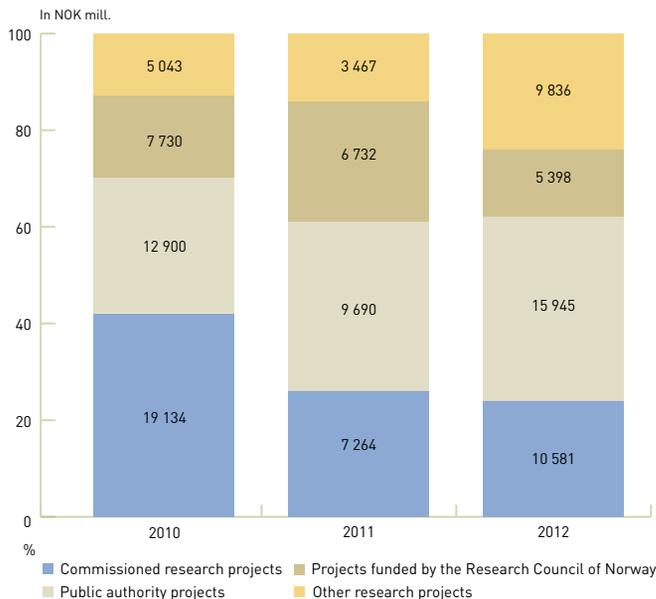
Expenditures 2012



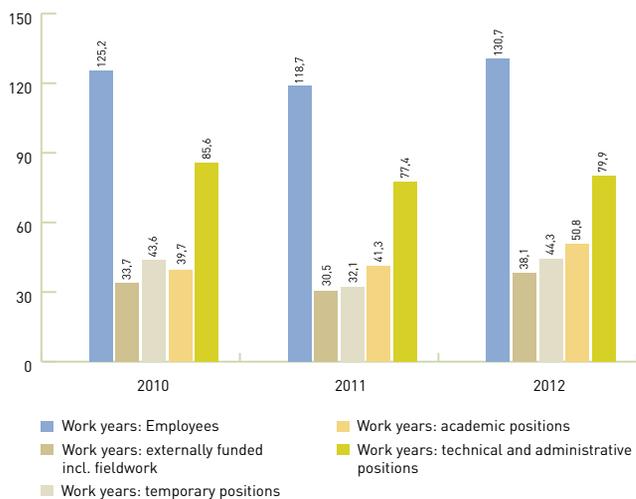
Grants of NOK 2.2 million from the Directorate for Cultural Heritage under "public authority" were included under externally financed activities up to and including 2010. From 2011 this income was included under other income.

The figures speak

Breakdown of revenues – collaborative and commissioned activities



Staff



Arnfinn Stendahl Rokne, project leader for "Afghanistan – Hidden Treasures" thanks the project group and everyone else who helped out for their contributions to the exhibition.

Afghanistan exhibition – Finances

The Afghanistan exhibition appears to have had an accounting deficit of approximately NOK 3.4 million.

The NTNU Board has issued a guarantee for NOK 4 million. The responsibility for the guaranteed amount is divided equally between NTNU as an institution and the University Museum as a unit.

Much of this loss relative to the internal budget was due to insufficient sponsor support and government funding. Internal revenues from ticket sales, catalogues and museum shop goods have been in line with, or higher than estimated.

The exhibition was executed with support from NTNU, the Norwegian Ministry of Foreign Affairs, the British Museum, National Geographic, the regional newspaper Adressavisen, Adolf Øien's Donation Fund, Vangslund Eiendom AS, the Torbjørn Erboe Endowment Fund, the Municipality of Trondheim, Skipnes Kommunikasjon AS, TORO Velbekomme, the Sør-Trøndelag County Council, the Freedom of Expression Foundation and the Comfort Hotel Park – Trondheim. The Museum was also able to negotiate very good discounts for some associated costs, such as for marketing and promotion.

Exhibition expenses were well managed and controlled, but the conditions over which the Museum had limited control, such as insurance and security that were necessary because of the government guarantee, turned out to be more costly than initially budgeted.

Employees

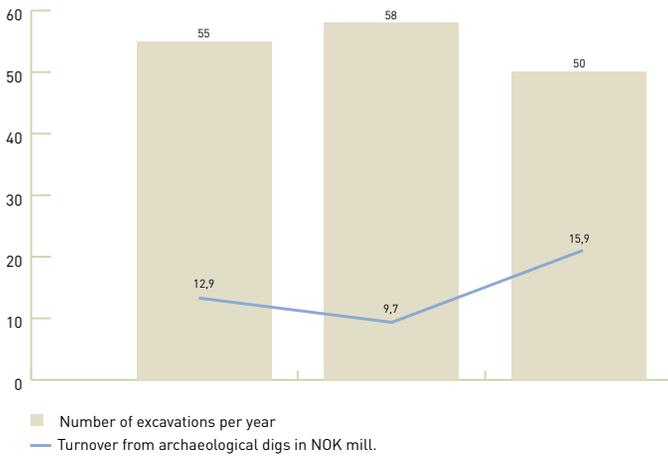
The University Museum had by far the highest response rate for NTNU's working environment survey in 2012, with a 92 per cent of the Museum's employees responding. The results show that there are no recurrent challenges for the Museum as a whole, but that there is room for improvement. The Museum has made a great effort in recent years to follow up on the results of the survey, which is likely one reason for the high response rate.

The Museum focused on strengthening its health, safety and environment efforts (HSE) in 2012. A new half-time (50%) position was created for a safety coordinator, which took effect beginning on 1 January 2013. The Afghanistan exhibition, in particular, led to an upgrade of the grounds around the Gunnerus building and between the Museum's other buildings to improve safety for the public, employees and artefacts. The Ringve Botanical Garden greenhouses was also renovated in 2012 to improve safety conditions.

The Museum is in the midst of a generational shift. During 2012, two scientific employees in the Natural History Section retired, and over the course of the next five years, half of the scientific staff of the Natural History Section will also retire.

The Archaeology and Cultural History Section will face the same challenges in the years to come. There also have been and will continue to be more and more Museum administration employees who will retire in the coming years.

Archaeological investigations



Underwater and land-based archaeological surveys, as a part of public authority.

The major archaeological survey at Hestvikholmen in Averøy alone accounted for a turnover of NOK 5.8 million in 2012, and is helping to bring revenues up to the desired, more normal level. In 2011, revenues were abnormally low, in spite of many archaeological investigations.

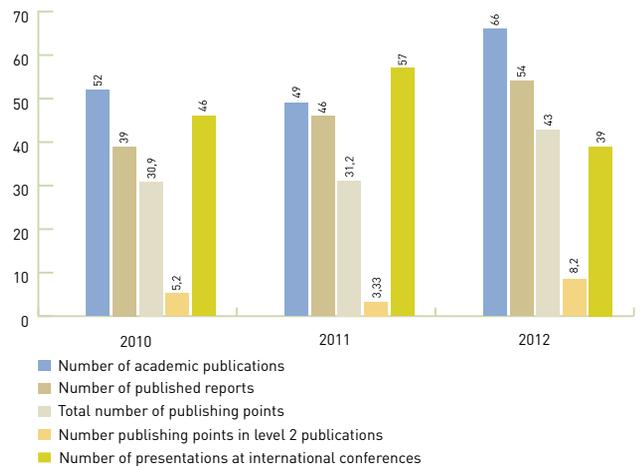


An archaeological dig

Over the course of seven weeks during the early summer, six Stone Age sites were excavated on Hestvikholmen in Averøy - in sun, wind and snow. The public could follow progress on the dig on www.norark.no. Nine hundred and thirteen people actually visited the excavation or were visited in the classroom by scientists.

Publication

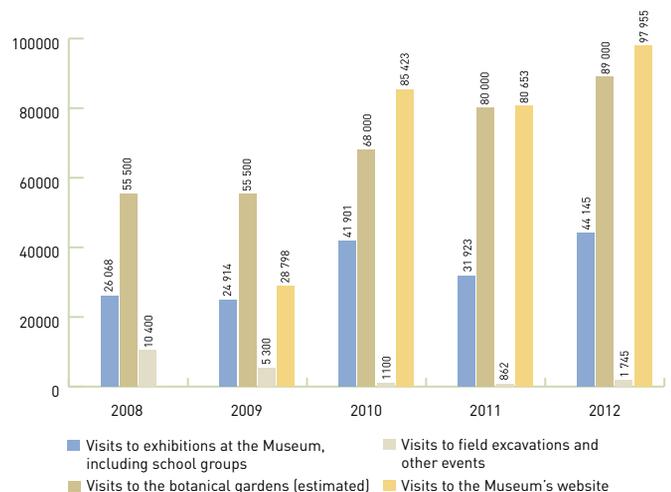
The number of publications and the number of publishing points increased significantly from 2011 to 2012. A large part of the increase came through the publication of a collection of articles entitled "Graver i veien. Arkeologiske undersøkelser E6 Steinkjer (Excavators in the Road - Archaeological investigations along the E6 in Steinkjer)" in the serial publication entitled Vitark - Acta Archaeologica Nidrosiensia, which included 10 scientific articles from the Museum in 2012. Additionally, the Norwegian Association of Higher Education Institutions decided that "online first" publications should be counted as being published in 2012, even though the printed publication will be issued in 2013. All academic disciplines in Norway's university and college sector will therefore show artificially high publication levels in 2012.



Attendance

There were more visitors to the exhibitions at the Museum's Kalvskinnet facility in 2012 than in 2011. "Afghanistan - Hidden Treasures" alone drew more than 21 000 visitors.

The number of visitors to the Botanic Gardens also increased from 2011 to 2012. The number of educational programmes for school groups and the total number of visits both more than doubled from 2011 to 2012, which is a very happy result.



The figures speak



Collections

Measuring an object from a marine archaeological survey.



Study activities

The Museum is responsible for the field methods course offered to archaeology students.

Collections

	2010	2011	2012
Estimated number of cultural history objects	453 425	471 244	504 832
Estimated number of natural history objects	1 378 719	1 406 316	1 423 532

The increase in the collection numbers is the result of research and management projects, goal-oriented acquisitions undertaken by Museum employees, and gifts. The growth in the number of cultural and natural history objects in 2012 is in line with average annual growth.

Study activities

	2010	2011	2012
Archaeology: Number of completed master's theses with Museum-based supervisor	4	3	2
Biology: Number of completed master's theses with Museum-based supervisor	2	4	3
Archaeology: Number of field days	2 014	1 824	1 716
Biology: Number of field days	285	1 220	1 207

The uneven distribution of supervisors for new master's students between the Department of Archaeology and Religious Studies (IAR) and the Archaeology and Cultural History Section (SAK) goes back several years, which is reflected in the fewer number of graduates whose supervisors came from SAK in 2012. The number for SAK will increase in 2014, and perhaps in 2013. The decrease in field days for archaeology was because SAK only had three leaders in the field training course in 2012. Normally there are four leaders, but there will be three leaders again in 2013. The increase in field training days in biology from 2010 to 2011 is because the Natural History Section spent more time teaching "Fauna and floristics," which has many students and a great deal of field activity.



In January, the Norwegian Broadcasting Corporation (NRK) visited Per Gätzschmann, a taxidermist in the Natural History Section, and followed the process of preparing a goshawk for the Museum's scientific collection. The picture shows the stuffing of an owl.

In February, construction workers found an unusually well-preserved Viking sword in Melhus in connection with the construction of a residential care facility. The sword probably originated from a ruined tomb, and archaeologists found a spearhead during a subsequent investigation.



Terje Thun, a dendrochronology specialist, has an on-going as project on post chests, for which the wood from 10 chests has already been dated. The picture is from Bakk in Orkdal. The tree was dated as having been felled shortly after 1280.



January

February

March

The Marine Ventures research project conducted field surveys in Tierra del Fuego in Argentina throughout all of February 2012 with the excavation of one 8500-year old settlement, and registration along with questionnaires in a national park.

GLIMPSES FROM 2012



On 8 February the Arts Council Norway unveiled its Documentary Heritage List for Norway. The oldest "document" on the list is the Kuli stone, a runestone that has been called Norway's baptism certificate, and that is displayed in the Museum's medieval exhibit.



In February, two exhibitions and associated education programmes were launched, called "Urban Animals" and "Nature's Builders". The exhibitions featured displays on animals, people, and architecture.



The Festningen preschool, the Trøndlag Fire and Rescue Service and TV Adressa contributed to an exciting and realistic fire drill in the Museum's exhibits on 28 March.

Dating

	2010	2011	2012
Radiocarbon Dating	1 414	1 493	1 357
Dendrochronological dating	231	461	627

There have been challenges in stabilizing the operations of the accelerator mass spectrometer in the radiocarbon dating laboratory. This has meant that our customers have had to use other dating services overseas. The Museum staff worked hard on this problem throughout 2012, and it is expected that the spectrometer will operate in a stable manner in 2013, which will increase the amount of radiocarbon dating conducted by the Museum.

Media Coverage

	2010	2011	2012
Press coverage, Norwegian	762	867	1 064
Press coverage, English	4	18	14
Articles on forskning.no	17	23	12

Source: Retriever



Media coverage

"Afghanistan – Hidden Treasures" resulted in a great deal of welcome media coverage..

Our targets in 2016

- The Museum is an active producer of knowledge to support sustainable cultural and natural environmental management at a high international level
- The Museum is a leading national centre for knowledge sharing and research communication, and will be an active and visible participant in the public debate
- The Museum's scientific collections are safeguarded and made available for research, curation and the public
- Ringve Botanical Garden is an attractive and well-functioning university botanical garden
- Kalvskinnet is a high-profile city district and a window on NTNU

SPARC is a research collaboration on the effects of climate change on perennial snow patches and vulnerable high-mountain heritage environments. The project began in earnest in 2012. Here researchers drill ice cores into Storbreen in Oppdal in March.



April

From the blog: Field leader John Ranvik found a cooking pit in the Nordbø field area, Rauma, Møre and Romsdal County.



May

Afghanistan's Culture and Information Minister Dr Sayed Makhdoom Raheen (right) officially opened the Afghanistan exhibition on 14 May, with Norwegian Ministry of Foreign Affairs State Secretary Gry Larsen, Afghanistan Ambassador to the Nordic countries Manizha Bakhtari, Afghanistan National Museum Director Omar Khan Massoudi, NTNU Rector Torbjørn Digernes, Trondheim Mayor Rita Ottervik, and Museum Director Axel Christophersen.



The pilot for www.norark.no, a blog where university museums can write about their archaeological surveys, went live on the Web.

The project is being led by the NTNU University Museum.

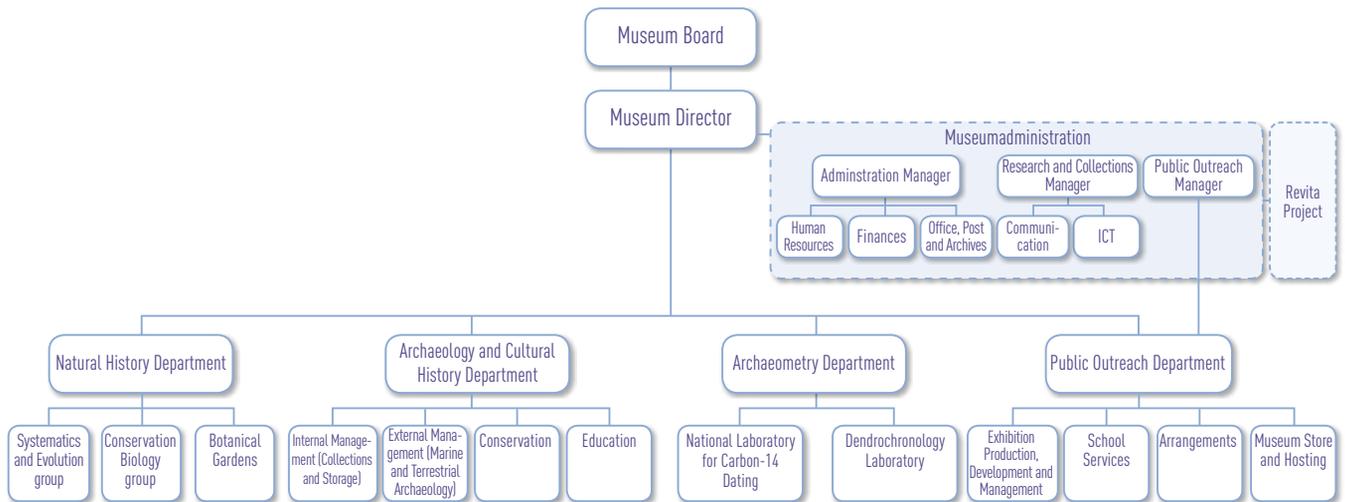


The exhibition "Afghanistan – Hidden Treasures" opened to the public on 10 May. Crowds flocked to the Museum both on the opening weekend and throughout the entire run of exhibition.



The online exhibition "Coin Treasure in Orkdal" was made available on the Web in conjunction with the Afghanistan exhibition. In the early 1900s, several Islamic silver coins were found in a marsh on the Holtan farm in Orkdal. The coins are more than a thousand years old.

Organization



The NTNU University Museum is one of six university museums in Norway and is a part of the Norwegian University of Science and Technology, NTNU.

The Museum is located at Kalvskinnet in the centre of Trondheim, along with its exhibitions, collections, administration and three of its sections. The Archaeometry Section is located at the Gløshaugen campus of NTNU. Ringve Botanical Gardens can be found at Lade, on the outskirts of Trondheim, and the Kongsvoll Alpine Garden is found in Kongsvoll, in Dovrefjell National Park. The NTNU University Museum has its origins in the Royal Norwegian Society of Sciences and Letters (DKNVS), founded in 1760.

In 1926, the Society was reorganized into two sections: the Academy and the Museum.

In 1968, the Norwegian Parliament approved a resolution to found the University of Trondheim and the Museum was transferred to the University on 1 April 1984. Further reorganization of the University led to the establishment of the Norwegian University of Science and Technology (NTNU) on 1 January 1996.

Since 2005, the NTNU University Museum has been treated at the same level as the University faculties, with representation on the Council of Deans and the Central University Research Committee.

Our role in society

The NTNU University Museum shall develop and share knowledge about nature and culture, and shall safeguard and preserve its scientific collections, making them available for research, curation and outreach efforts.

On 12–15 June, researchers conducted geophysical investigations of the "Herlaugshaugen" burial mound in Leka, in Nord-Trøndelag County. This is one of Norway's largest burial mounds, with a diameter of 62–64 meters and a preserved height of as much as 6 metres.



June

On 20 July, an archaeological investigation related to the construction of the new intersection at the Krifast bridge in Gjemnes was completed. Among the relics that were found were several shale points and a lovely little greenstone chisel.



July



In August, a team from the Museum travelled to three different waterways in south-western Greenland to conduct genetic tests of salmon. Researchers will study whether the expected increase in sea temperatures around Greenland will lead salmon populations to spread. The photo shows Jo Vegar Arnekleiv with a catch of Greenland.

August

September



During the first two weeks of school summer holidays, 40 10- to 12-year-old children participated in a range of research-based activities in a summer school called "Sommerlarm".



The Kongsvoll Alpine Garden is at its most beautiful in the summer. In 2012, additional plant species in the garden were marked with information signs, much to the delight of visitors.



Work on the 2010 anniversary exhibition entitled "Kunnskapslarm" (Knowledge Alarm) was among the topics in "Museumology in Norwegian. What University Museums Have Done", a new book released in August. Pictured is a part of the exhibition, "1760 - Science at the edge of the world."



How can a mosquito know that your blood will be sweet until it has bitten you? NRK's science programme for kids, Newton, tried to answer that question as programme host Selda Ekrem went with Torbjørn Ekrem to the forest to find out why some people get more mosquito bites than others.



Preparation of samples for dating.

The Archaeometry Department

dates archaeological, geological and organic matter, using radiocarbon dating (carbon-14) and dendrochronological dating (tree rings). The National Laboratory for C-14 dating is housed in the section, which is the only place in Norway that is capable of dating organic material.

The Public Outreach Department

is responsible for the production and maintenance of the Museum's exhibits, and coordinating public events and school programmes and other educational offerings. The section also runs the Museum Shop.



In connection with "Afghanistan – Hidden Treasures", a tablet and smartphone game was created that accompanied visitors through the exhibit.



This is from an archaeological survey in Gimse in Melhus.

The Archaeology and Cultural History Department

studies pre-historic, historic, maritime and Sami archaeology. The section is responsible for the cultural history collection and is home to the Museum's conservation laboratory.



The Kongsvoll Alpine Garden is one of the Museum's two botanical gardens.

The Natural History Department

manages and contributes to the Museum's natural history collections. The section conducts research in biogeography, biosystematics and ecology, with an emphasis on conservation biology, and operates the Museum's two botanical gardens.

On 28 September, a very happy Håkon Bleken was able to confirm that his modernist altar wall would be saved. Financial support from Selskabet for Trondhjems Bys Vel gave the University Museum the ability to accept the gift from St. Olav's Church.



In October, Associate Professor Lars F. Stenvik reported that traces of copper production from the Middle Ages that used copper ore had been found in Norway for the first time, in Kopperåa in Meråker.



October



In November, the Museum invited people to attempt to set a new record for the number of toilet paper roll elves. The result was an imaginative collection of toilet paper roll elves, which, due to the lack of any other official city record holders, can be said to have been Trondheim's largest. The attempt to set a record was part the marketing plan for the exhibition, "A little bit crazy: collectors and their collections".

November



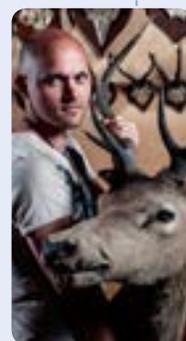
In September, 20 sea trout from Snildalselva and 21 sea trout from Rovatnet were tagged with acoustic markers, as a part of the research project entitled "The secret lives of trout".



The exhibition "A little bit crazy: collectors and their collections" opened on 11 October. What exactly is the difference between private collections and museum collections?



Visitors large and small walked the nature trail amongst pumpkins, witches and ghosts in the dark at the Ringve Botanical Garden on Halloween, 31 October.



The DNA analysis of 7000-year-old bones shows that the decline of the deer population started long before it had been previously thought.

In November, PhD candidate Jørgen Rosvold was able to say that the decline could be traced back to the Iron Age.

Challenges

Need for new storage magazines for collections

"The biggest challenge for the safeguarding and conservation work at the Museum is the lack of satisfactory storage magazines for the collections. The establishment of new storage magazines is planned in conjunction with the 'Kalvskinnet Science Centre' construction project."

There was little progress in 2012 on this issue as NTNU awaited clarification from the Norwegian Ministry of Education and Research concerning the university's campus plans. A number of safeguarding and preservation tasks have been deferred pending a clarification around the magazine situation, and by the end of the year, exhibition space had to be used as a magazine, which meant the space had to be closed to the public.

Measures: The Museum and NTNU must ensure progress related to the "Kalvskinnet Science Centre", in collaboration with the Ministry of Education and Research. The science centre must be an important element in NTNU's other campus and expansion plans.

Strategic action plan for research

The Museum has a specific research strategy in the Museum's overall strategy plan. There is a need for an action plan to help realize the Museum's research strategy and NTNU's main strategy, "Knowledge for a better world". A significant percentage of the academic staff at the Museum is approaching retirement. It is a challenge for the Museum to recruit new staff with essential skills.

Measures: The research strategy will be operationalized in 2013 through the preparation of a strategic action plan for research, and hiring plans for both the Archaeometry and Archaeology and Cultural History sections.

Maintain visitor numbers

Visitor numbers both in the botanical gardens and the exhibits have grown positively. This is a trend that the Museum wants to reinforce. It is a challenge to maintain strong visitor numbers in years without a large flagship exhibit such as we had in 2012. The oldest exhibits also need to be modernized to meet the expectations of today's visitors. The botanical gardens need additional information initiatives that will provide visitors with more value from their visit.

Measures: The Museum must continue to work to ensure a predictable financial framework for its exhibition operations that also allows for development. A new and comprehensive plan for exhibition activities, including a development project for the oldest exhibits, will be prepared in 2013.

The University's historic collections

NTNU has a large and important collection of artefacts from its own history as a university. These are important both for the university's and the nation's history, but also for the history of research. The Museum has been given the task of assisting the rest of the university with the cataloguing and safeguarding of these objects. The new internal rent model for NTNU has led to increased pressure for floor space, and it now costs faculties money to store these kinds of objects and instruments.

Measures: The Museum and the Rector must be clearer in taking the initiative on cataloguing work in faculties and must together consider the possibilities of an incentive scheme where the storage of historic university objects is not abandoned because of economic considerations. A project leader should be added who can follow up on the work in the faculties and prepare a long-term strategy for future work with the collection.

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Twitter: twitter.com/Vitenskapsmuseet

 **NTNU**
Vitenskapsmuseet

The Museum's most active blogger, Magni Olsen Kyrkjeeide, who writes "The wonderful world of mosses", launched his own advent calendar with moss-related posts for each day of Advent. The picture shows a juniper haircap moss.



Conservators completed their effort in December to restore the fantastic Vardø cupboard, which dates from 1460 and is in the Museum's church art collection.



The publication Vitark 8, entitled "Excavators in the road", was released at the end of 2012. The publication describes the archaeological surveys of the E6 in Steinkjer. The picture shows finds from a boat grave that was discovered in Lø, in Steinkjer.

December



The Museum is an active partner in NTNU's AUR Lab, which works with applied subsea robotics. In December the lab and the Museum conducted expeditions in Trondheim Fjord, which resulted in both new knowledge and several news stories that were broadcast on Schrødingers Katt, the science TV show produced by NRK.



The oldest dendrochronological date in 2012 was from a log from Gjevilvatnet, which had the year 857 as its oldest annual ring.



Creepy-crawlies in Christmas trees resulted in a mention of Professor Torbjørn Ekrem in 115 Norwegian newspapers in the month of December. Denmark's TV2 also reported on the matter. The picture shows a dwarf cicada that was found in a spruce.