

# Nature's Defence

Nature Management Plans  
for the Danish Armed Forces' training areas



Ministry of Defence  
&  
Ministry of Environment  
Danish Forest and Nature Agency

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# The Danish Armed Forces and the environment

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**T**he Danish Armed Forces' firing ranges and exercise areas contain some of the best preserved natural areas in Denmark. They have been left to lie for decades, untouched by the intensification of agriculture on our farming land, and today they represent important sanctuaries for a number of rare and endangered species of plants and animals.

*Long-term nature management plans are being drawn up for the Armed Forces' firing ranges and exercise areas aimed at safeguarding these areas as optimal training grounds, while at the same time conserving nature. The Danish Armed Forces and the Danish Forest and Nature Agency have jointly developed a unique concept which combines the training of soldiers with consideration for environmental protection and outdoor recreation.*

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## **Nature under pressure**

Throughout the 20<sup>th</sup> century, competition for the open country increased significantly in Denmark. Agriculture, with its increasing stock levels and ever larger machines, has demanded more and more earth under the plough. Urban development has also taken its share of the open country with the building of housing estates, business parks, and new road systems – all at the expense of the heaths, marshes, lakes, meadows, and small biotopes.

## **The Armed Forces' areas are natural treasures**

The Armed Forces' training areas have often completely escaped the influences which the open country has been subjected to. Some areas have lain in a natural state for several generations, a few have never been touched, and the natural flora and fauna has had ample opportunity to develop freely. Many of the wetlands have never been drained, the sandy soils have blossomed with heather, and where small wooded areas have been allowed to take care of themselves they have developed into areas approaching natural woodlands, with a very rich natural diversity.

*The Armed Forces' training areas contain a rich natural diversity. No less than 43 per cent of the Armed Forces' approx. 32,000 ha. have been designated as protected natural habitats under the Nature Protection Act – divided into lakes, water courses, marshes, heaths, dry grasslands, and coastal and freshwater meadows. By comparison, the protected natural habitats in Denmark as a whole constitute only 9 per cent of the total area.*

*The heath in Holstebro training area shows strong traces of tracked vehicles. A targeted care is essential to preserve the heath as a training and exercise area for the future.*



### **Rough treatment**

The Armed Forces' active use of these areas has naturally left clear traces in the terrain in many places. Detonations, exercises, and driving in tracked vehicles take their toll on the terrain, and the contest between tracked vehicles and rare or endangered plants and animals can sometimes seem rather unequal.

Conversely, some military activities actually help maintain certain types of landscape. Driving with heavy vehicles on the richer soil types helps keep down the overgrowth of bushes and trees on the open dry grasslands, while occasional, limited fires from ammunition impacts benefit the heaths and dry grasslands which are popular homes for many reptiles, butterflies and plant species.



*Some species adapt to the military's activities. On Rømø Island, old lorries are used for target practice for fighter planes – and as nesting areas by the seagulls.*

*Heaths are the most widely protected natural habitat in the Armed Forces' areas and amount to about 7,850 ha, equivalent to roughly 10 per cent of Denmark's total heath area. The large regions of heath in the Armed Forces' training areas also represent some of the largest and best-preserved heath areas in Denmark.*





# Environmental strategy for the military areas

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*In 1993, the Ministry of Defence adopted an environmental strategy, the goal of which was to advance the combined efforts being made in environmental and nature protection within the Ministry of the Defence's sphere of operation. A central element of this strategy is that a unique cooperation between the Armed Forces and the Danish Forest and Nature Agency aims to preserve a number of Denmark's most interesting and precious natural areas for future generations – while continuing to allow the Armed Forces to carry out their essential training and exercise activities.*

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## **Environmental strategy aims to protect nature**

In recognition of the fact that the Armed Forces' firing ranges and exercise areas contain some of the best natural areas in Denmark, it was decided as part of the environmental strategy that the protection of nature should be strengthened through the nurturing of animal and plant life. It was further decided that attempts would be made to extend opportunities for public access, to the extent that military usage and visitor safety considerations allowed.

*Water holes are valuable natural areas. The Armed Forces are making an effort to maintain water holes in order to provide good living conditions for plant and animal life.*

*A former peat bog is becoming overgrown by cotton-grass and peat moss – thus re-establishing a rare nature-type in Denmark.*

## **Nature management plans are the means**

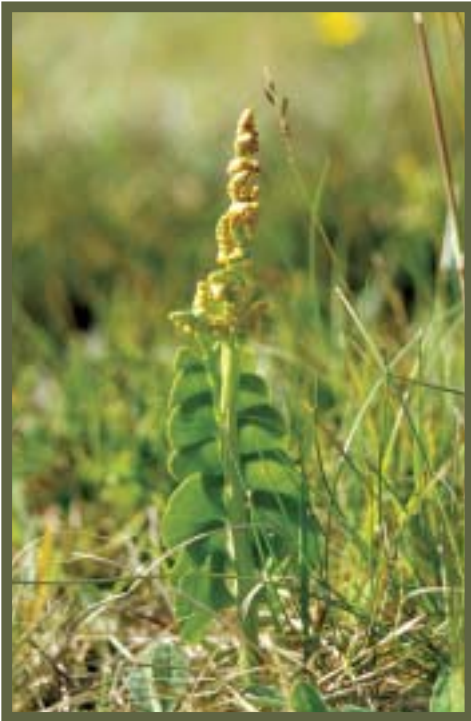
The work of protecting and preserving natural values began with a cooperation agreement with the Danish Forest and Nature Agency. The Danish Forest and Nature Agency is drawing up long-term, 15-year, nature management plans for all the Armed Forces' firing ranges and exercise areas, in close cooperation with the local military authorities. This work aims to ensure that appropriate consideration is given to natural values during military use, that the terrain is not damaged to an extent which would impact on the Armed Forces' future exercise capabilities, and that public interest in these fascinating areas is accommodated, as far as possible.

Better protection of natural values on the Armed Forces' areas is to be achieved by preparing nature management plans for each military area. The nature management plans are being prepared by the Danish Forest and Nature Agency in close cooperation with the local military authorities. By commissioning these nature management plans, the Armed Forces have committed themselves to take care of and preserve the unique natural areas which they administer.

## A flexible and dynamic tool

The nature management plans are binding agreements between the Armed Forces and the Danish Forest and Nature Agency, and are valid for 15 years. In order to constantly keep such a long-term plan relevant and flexible, ongoing changes can be made to the plan, on the condition that both parties agree.

In contrast to traditional conservation instruments, the plans thus allow for adaptation to the Armed Forces' dynamic needs and changing situation, for example, the sudden need to do exercises in connection with dispatching peace-keeping forces. It is precisely these opportunities to constantly weigh the need for natural protection and recreational considerations against the needs of the Armed Forces which make the nature management plans a very suitable instrument for the preservation of natural interests in military areas.



*The rare fern, moonwort (Botrychium), now thrives on Skive exercise site thanks to a targeted care of the heath area.*

- |      |  |
|------|--|
| 1991 | The Armed Forces contact the Danish Forest and Nature Agency. As a pilot project, work commences on a nature management plan for the firing range and exercise area in Oksbøl.   |
| 1993 | The Ministry of Defence works out an environmental strategy aimed at advancing the combined efforts being made in the area of environmental and natural protection.  |
| 1994 | The nature management plan for the Oksbøl firing range and exercise area is completed.   |
| 1995 | The Armed Forces enter into a cooperation agreement with the Danish Forest and Nature Agency regarding the preparation of nature management plans for the 16 largest military areas – a total of 21,000 ha.  |
| 1998 | The cooperation agreement is extended to cover <u>all</u> the Armed Forces' firing ranges and exercise areas – about 32,000 ha. in total.  |
| 2001 | The Danish Home Guard Command enters into a similar cooperation agreement with The Danish Forest and Nature Agency regarding the preparation of nature management plans for all the Home Guard's firing ranges and exercise areas – a total of 1,203 ha. |
| 2004 | Preparation of the first generation of nature management plans is expected to be completed.  |



*The tree frog, *Hyla arborea*, is one of the species which has benefited from the cooperation between the Armed Forces and the Danish Forest and Nature Agency. At the Haderslev exercise range, 20 waterholes have been re-established to protect the population of tree frogs. The efforts made in several areas have together had such a large impact that the tree frog has now been taken off the Red List of endangered species in Denmark.*

### **The partnership is not a coincidence**

The fact that the Ministry of Defence chose to work with The Danish Forest and Nature Agency in the work of nature management planning was not arbitrary. The Danish Forest and Nature Agency has many years' expertise in long-term planning and management of forest and natural areas, where several different considerations often have to be evaluated. As far as the Danish Forest and Nature Agency is concerned, it is a natural part of the Agency's responsibilities to contribute to environmental considerations being integrated into the activities of other ministries.

Through positive cooperation, the Armed Forces and the Danish Forest and Nature Agency have succeeded in achieving a balance between the need to train soldiers and consideration for the environment and recreational interests, via the nature management plans. A cooperation which, based on goodwill and mutual respect for each party's interests, has contributed to a number of Denmark's most interesting and precious natural areas being preserved for future generations.



# Nature management plans accommodate multilateral interests

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**T**he long-term nature management plans aim to ensure that a satisfactory balance is achieved on the Armed Forces' areas, between the protection of natural values, the Armed Forces' military exercise needs, and recreational interests. Involving the public helps achieve this balance.

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## **International natural values are also protected**

By preparing nature management plans, the Armed Forces are not simply ensuring that a number of the most valuable natural areas in Denmark are being protected and preserved for future generations. The plans are also a guarantee that the Armed Forces' obligations towards *internationally* protected natural values are being fulfilled – while at the same time allowing the Armed Forces to carry out necessary training and exercise activities.

## **Consideration for the Armed Forces' military exercise needs**

The nature management plans need to take into account both national and international natural values. But for the Armed Forces, the plans also ensure that the firing ranges and exercise areas are operated and maintained

in such a way that they can fulfil military exercise goals in the future. Without targeted management, many areas become overgrown with scrub, and military exercises which are too harsh wear down the terrain so that future training options become limited. However, with the right organisation and planning, the terrain can be set up and administered in such a way that it remains in the best possible shape for military exercises, and new essential exercise facilities can be incorporated into the terrain.

Natura 2000 is a coherent network of protected natural areas in the EU. The designations are aimed at ensuring the protection of natural habitats and species which are particularly endangered, vulnerable, rare or in need of protection at the European level. In Denmark, no less than 45 per cent of the military's areas are covered by Natura 2000 – precisely because of the rich natural diversity of these areas. By comparison, only 7 per cent of the total area of Denmark is covered by Natura 2000.

*As a result of the nature management plan, a number of forest areas on military land have been set aside to grow wild, without forestry operation and maintenance. In this way, the Armed Forces are helping to fulfil Denmark's international obligations to preserve and designate more natural forests.*

## I cooperation with the public

Because the Armed Forces' areas are so rich in natural values, many *recreational* interests are attached to them. By involving the public in the process, the Armed Forces are ensuring that these considerations are also accommodated in the planning – to the extent they are compatible with military usage and consideration for the natural values.

The public are involved right from the start of the process: The Danish Forest and Nature Agency, in cooperation with the local military authorities, arranges tours of the training area for a number of interest organisations and the local and county authorities. The tours give the participants an overview of the area's natural and



*At the Antorskov exercise range, the 20 ha. Nysø is being re-established. At the same time, this new natural area provides the armed forces with the opportunity to practise two new exercises on the range: Bridge building and lake crossing.*



*At the Nymindégab firing range and exercise area, dense, impassable mountain pine plantations covered large parts of the terrain. As a result of the nature management plan, clearings and trails have been made in the scrub, and the terrain is more useful for the education and training of units today.*

*The clearings have also provided light at ground level, so the heather, which had been displaced, can sprout again.*

*Involving the public in the planning process has led to greater understanding of the Armed Forces' activities in the local community. Conversely, by making minor adjustments to their exercise activities, the Armed Forces have largely been able to accommodate the many interests attached to these fascinating training areas.*

*On Denmark's largest firing range and exercise area in Oksbøl, the Armed Forces normally fire live ammunition from planes, tanks, and mortars. Outside the firing and exercise times, the public has now been given access to this fascinating terrain. Access is coordinated using signs and notices in the daily press.*



recreational facilities and thus provide a basis for them to make proposals and requests for future usage. The Armed Forces and the Danish Forest and Nature Agency then weigh up the various considerations and requests and assess whether these can be met.

The reason that the tours and this involvement take place so early in the process – before commencing work on the actual draft plan – is due to the desire to ensure the public has genuine influence, before attitudes and ideas have become fixed. In order to further ensure opportunity for public influence, the draft plan is sent out to those involved for comment.



### **Involvement leads to mutual understanding**

Involving the public ensures that a satisfactory balance is achieved between the multilateral interests. But involving the public has also meant that the nature management plans have, in many cases, been the starting point for open dialog in the local community. Dialog which has led to more openness about the Armed Forces' activities and thus a better understanding and greater acceptance – to the benefit of both the Armed Forces and the public.

The nature management plans ensure that a satisfactory balance is achieved on the Armed Forces' training areas between:

- protection of special natural values
- the Armed Forces' need to train and educate units under realistic conditions
- consideration for recreational interests

The latter point is ensured by involving the public early in the process.

*The Rømø Island firing range is one of the Air Force's firing ranges – and designated under Natura 2000. The area is situated in the middle of unique tidal flats, and is one of Denmark's important areas for seals. By preparing a nature management plan, conflicts between environmental considerations and military activities have been exposed. The Armed Forces have thus chosen to regulate their exercises so that shelling is suspended during the seals' primary breeding season.*

*Involving interest organisations and local and county authorities often results in many diverse proposals – from systems of riding trails to driving in off-road vehicles, from holding orienteering events to setting up nest boxes for birds. It is necessary to evaluate the various proposals to find a satisfactory balance between utilisation and protection.*





# Structure of the plan

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**T**he nature management plans make it possible to give appropriate consideration to the natural values – while at the same time carrying out necessary training activities and exercises. Specific directions and simple mechanisms are used to make the plans practical to implement – also for the everyday military user.

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## Base map – a status description

The nature management plans are based on an inspection of the training area and a digital base map. The particularly interesting natural values are recorded and identified during the area inspection – and especially the natural values which need to be given special consideration. The base map illustrates the types of habitat and the way the area is currently being used.

While registering the Tranum firing range, The Danish Forest and Nature Agency found a new type of orchid in Denmark. The plant has been given the name “Thy Gøgeurt” (*Dactylorhiza* sp.), and its habitat has been protected in the nature management plan.



During the preparation of nature management plans, several breeding bird species have been found which are rare in the rest of Denmark – some of them quite rare. These include: Golden Plovers (*Pluvialis apricaria*), Short-eared Owls (*Asio flammeus*), Great Grey Shrikes (*Lanius excubitor*), Wrynecks (*Jynx torquilla*), Hen Harriers (*Circus cyaneus*) and Wood Sandpipers (*Tringa glareola*).

Mammals are widely represented in the military areas – from Elks (*Cervus elaphus*) to the Common Shrew (*Sorex araneus*). In three areas, Otters (*Lutra lutra*) have been found breeding.

But there are also other factors relevant to nature management. The following aspects are recorded and described:

- natural and cultural values
- the landscape and its geological past
- the way the training area is currently being used by the Armed Forces
- the area’s existing nature management activities
- legal restrictions on use of the training area and national and international obligations
- existing public access to the area

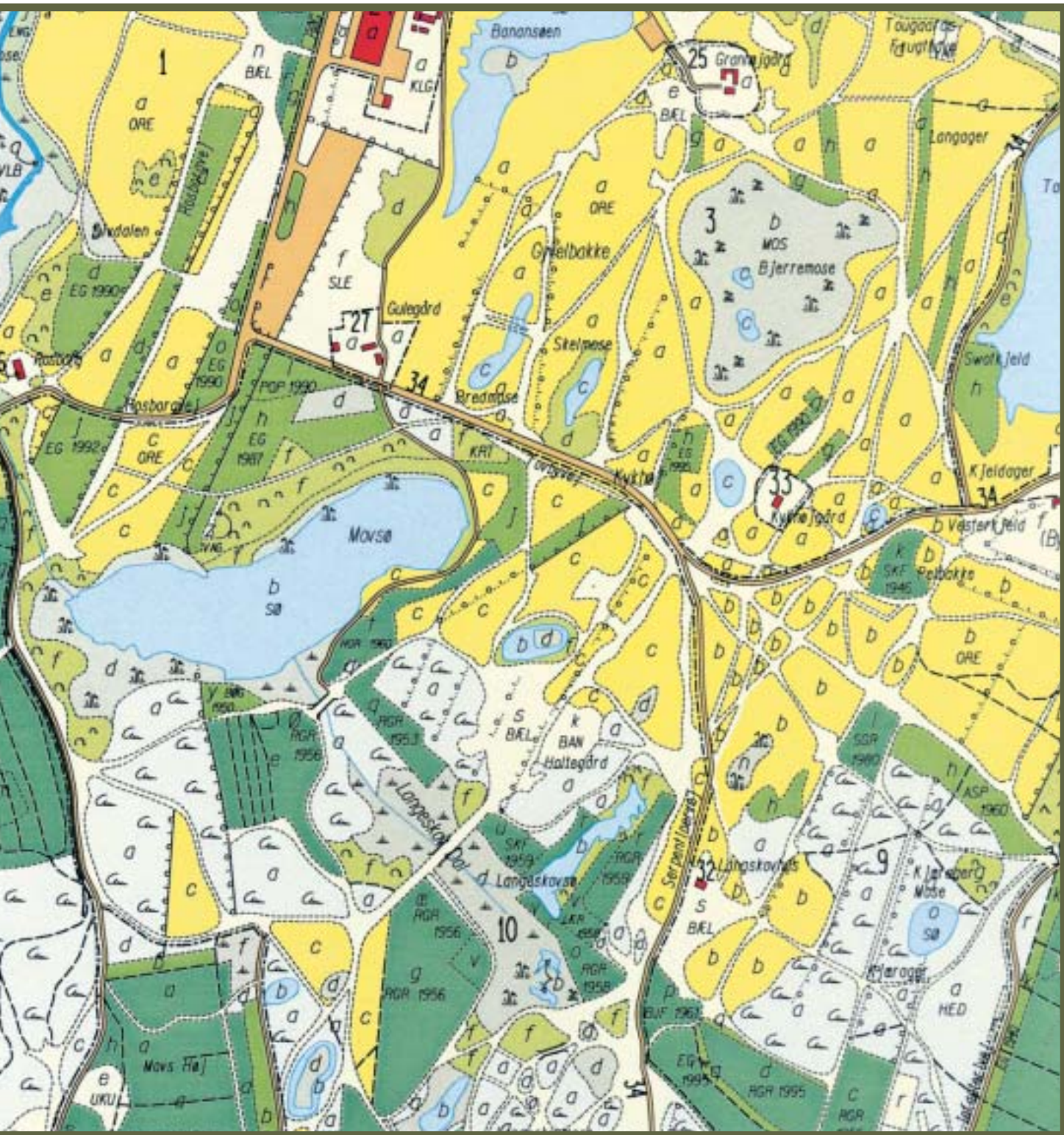
On the basis of an inspection of the training area, a digital **base map** is prepared. The map shows the area's current usage and provides a basis for the rest of the process.

As well as illustrating objects in the area such as houses and roads, habitat types, such as forests, lakes, marshes, and heaths, are also drawn in based on a biological registration.

## LEGEND

	Deciduous forest
	Coniferous forest
	Coppice
	Heath
	Bog
	Common
	Lake
	Meadow





### **Exercise map – for military use**

In the intensively used training areas where driving in tracked vehicles and firing with live ammunition takes a severe toll on the terrain, the nature management plan's most important function has been to regulate the damage in sensitive areas. Various regulations have to direct the exercises around sensitive areas and ensure that the terrain is not damaged to such an extent that its potential for training and usage deteriorates.

Drawing up an *exercise map* aims, in an easily comprehensible way, to illustrate these regulations and highlight the sensitive areas.

Some of the most commonly used regulation mechanisms in relation to exercises are:

**Compulsory tracks for tracked vehicles.** On sandy soils in particular there is a great risk that tracked vehicles will wear away the vegetation and turn the landscape into a barren wasteland. Marking out compulsory tracks aims to protect the terrain in the most heavily used areas while also preserving future exercise options.

**Traffic regulation.** All traffic and exercises are directed around very sensitive areas, ancient monuments, steep slopes, etc. – so-called “no-go zones”. Conversely, other areas are set aside for free exercises.

**Regulation of wetlands.** The wetlands are divided up so that traffic and exercises are concentrated around a few lakes. Other wetlands are exempted from activities within 5 metres of the shore.

**Designation of special shelling areas.** The terrain is divided up into special shelling areas and areas which are free from firing and shelling.

**Designation of special exercise areas.** Special areas are designated where certain forms of intensive exercises are permitted – e.g. trench digging, detonations, assembly areas, recovery operations, and fire exercises.

**Designation of zones to be left undisturbed.** In consideration for animal life, areas can be designated which cannot be used for exercises in certain periods, e.g. during breeding time.

The exercise map also contains information on all the military installations, sector divisions, etc., and is therefore an ideal tool during exercises.

Very large areas can be divided into categories based on their natural values, each with its own rules for exercise usage and activities, e.g.:

**Category I:** The natural values have greater priority than military applications. No military activities are permitted apart from travelling on foot and driving along existing roads.

**Category II:** Not as sensitive as category I. All military activities are permitted, with isolated restrictions. Tracked vehicles are to be driven along existing (fixed) tracks.

**Category III:** Intensive exercise area – especially for tracked vehicles. No restrictions.

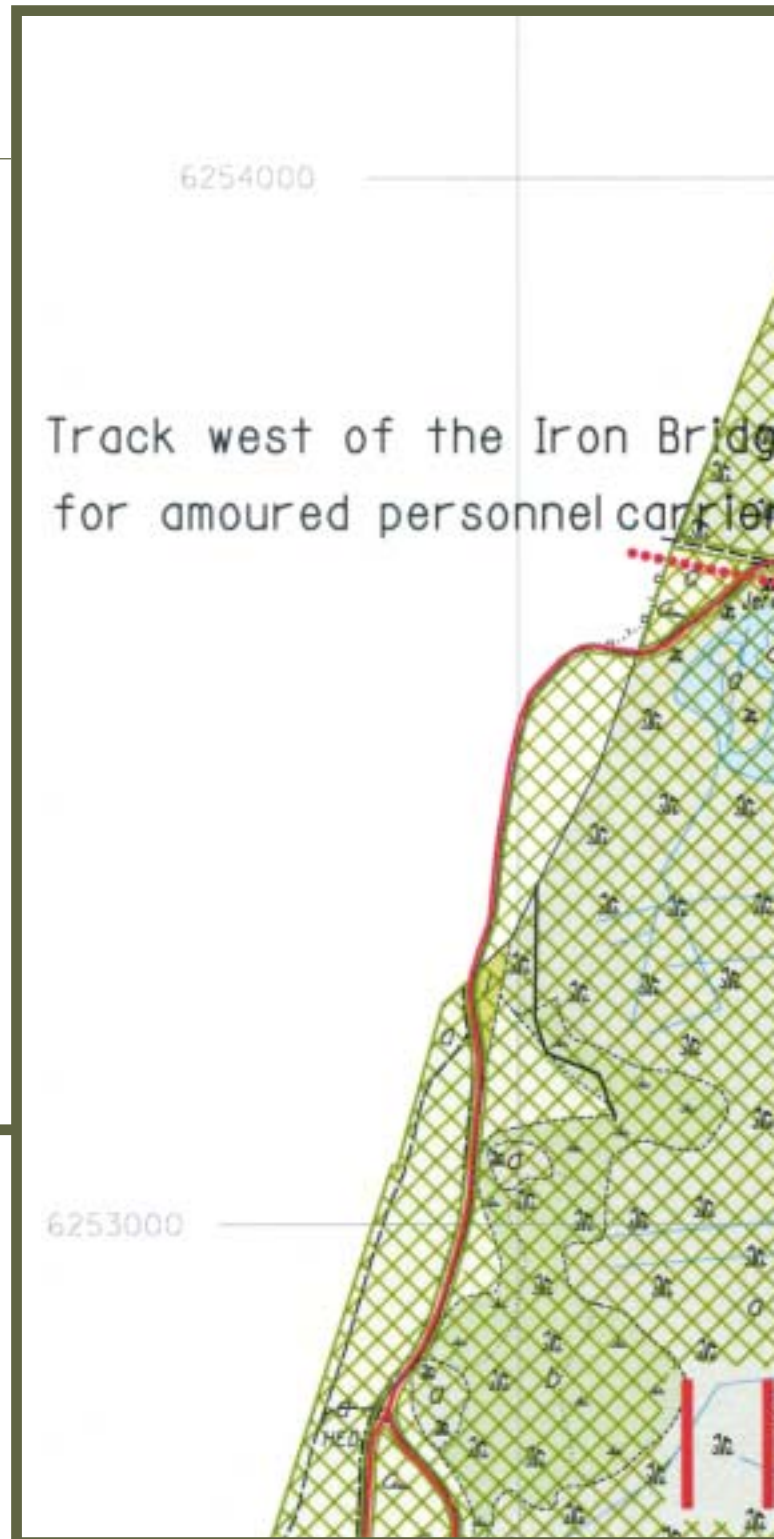
*Ancient monuments and traces of cultural history are mapped and protected in the nature management plan. These posts are to prevent vehicles from driving on this bronze-age grave mound.*



Using the base map as a basis, an **exercise map** is drawn up which contains information about all the military installations, sector divisions, and exercise-related restrictions. The map is used during exercises – particularly by squad leaders and platoon leaders.

## LEGEND

- VI Sector number
- ⋯⋯⋯ Sector boundary
- Compulsory track for armoured vehicles
- All training and exercise activity prohibited, apart from crossing on foot
- Recovery area
- Deciduous forest
- Coniferous forest
- Open land
- Lake





### **Nature management map – an effective management tool**

While the exercise map primarily contains restrictions and regulations relating to training and exercises, the *nature management map* illustrates future nature management initiatives for the area.

A nature management map can contain directives on:

**Systematic care for open natural areas, such as dry grasslands and heaths.** Systematic care makes allowance for the special plant and animal species which have adapted to these, now rare, natural habitats.

**Care of waterholes.** Dredging of water holes, cutting back growth.



*A Brimstone Butterfly (Gonepteryx rhamni) draws nectar from a thistle. Mowing in the late summer ensures that the butterflies' larvae have time to fully develop.*

**Care of ancient monuments.** Cutting back tree growth so that roots do not damage cultural assets.

**Ground weed control.** Giant hogweed has spread unhampered in many places in Denmark. This plant is poisonous and can lead to an area becoming unusable for exercises due to concerns for soldiers' health. Systematic clearing can make an area accessible again.

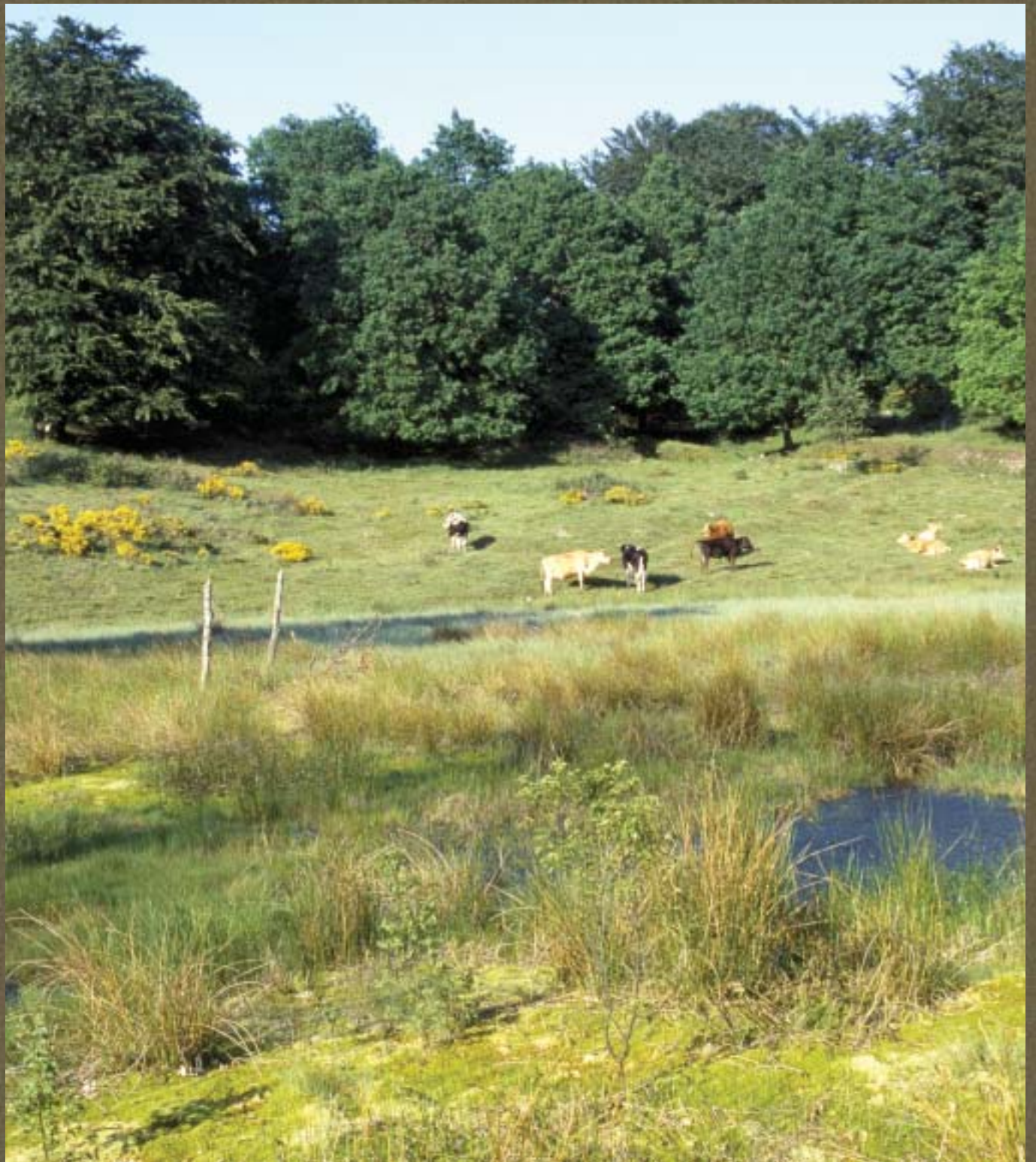
**Raising water levels.** Raising water levels, whether on a small or large scale, benefits birds, and aquatic animals.

**Clearing and planting vegetation.** Clearing vegetation or establishing new living barriers and plantations can improve the value of an area for exercises.

**Designating areas for new exercise facilities.** The plan takes into account future exercise-related needs, for example, construction of noise barriers, close combat villages, obstacle courses, or new mortar ranges.









In the nature management plan, the individual initiatives are listed in a *prioritised action plan*, so that the work is spread over the entire plan period.

*The targeted care of open natural areas benefits many plants and insects. Grazing or mowing keeps down the dominating grass species and gives the more light-demanding flowers a chance.*

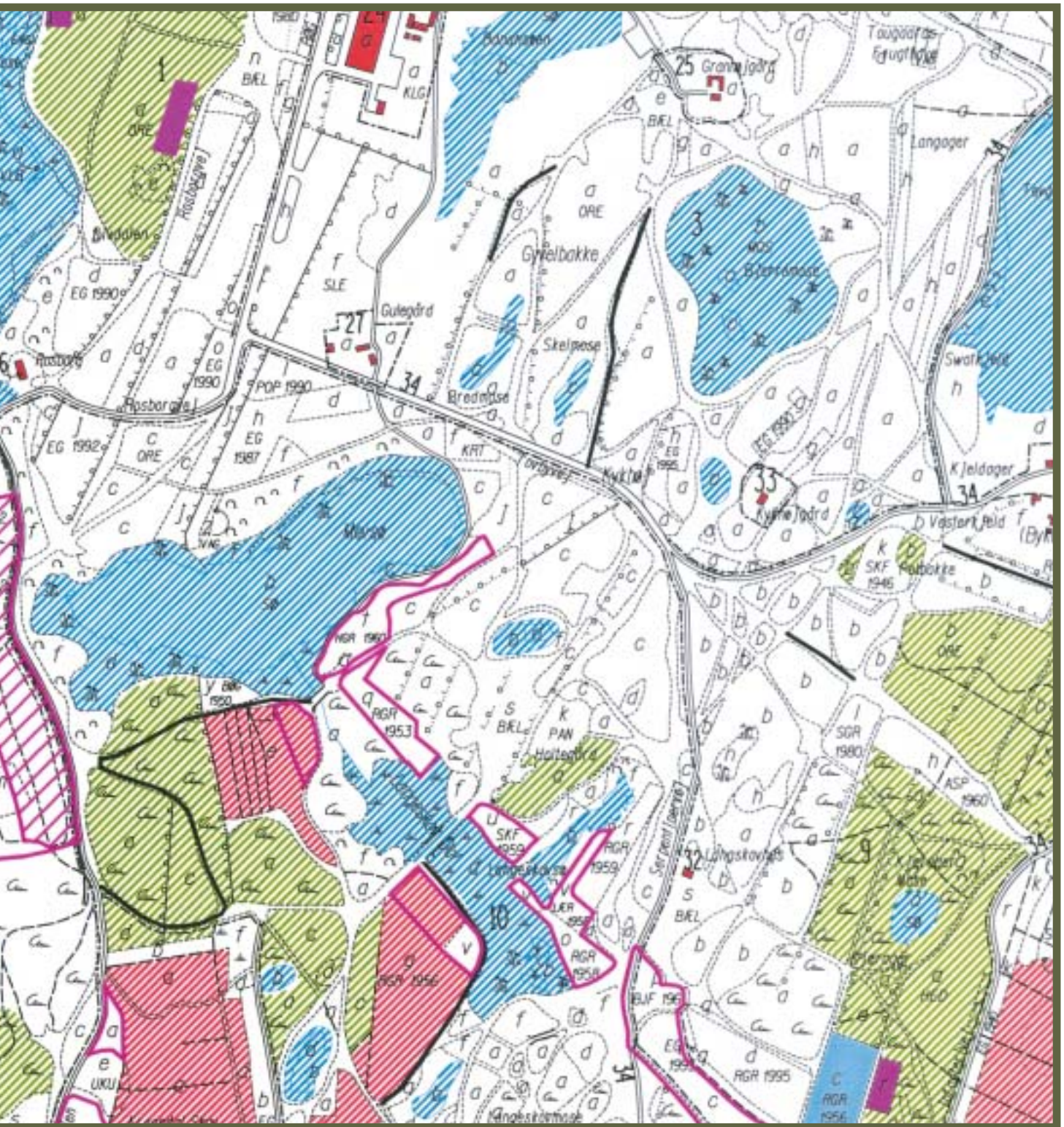


The **nature management map** illustrates the initiatives, which are to be undertaken during the plan period. Colour and special symbols are used to highlight the areas where changes in usage must be made or where special care measures are needed for the sake of flora and fauna. Planned construction and plantations are also shown.

## LEGEND

-  Future game reserve
-  Forest reserved for regeneration with Scotch pine as main tree species
-  Wetlands, cf. nature management plan
-  Forest reserved for regeneration with Oak as main tree species
-  Area that needs special vegetation care
-  Forest to be phased out
-  Forest to be phased out toward the end of the period
-  Tracked vehicles track to be closed down







# The Armed Forces are accumulating new knowledge and experience

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*I*n the process of elaborating nature management plans, Armed Forces personnel have their attention drawn to the need for management of the training areas, and the opportunities to safeguard multilateral interests. Involving personnel in the process ensures that the plan is practical to implement. Training will ensure that the personnel receive the necessary knowledge.

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## **Involving personnel**

Employees from throughout the Armed Forces, at all levels, are involved in the preparation of the nature management plans. As well as ensuring that consideration for the Armed Forces' usage of the areas is accommodated, this involvement will also mean that the plans will be practical to implement, realistic, and locally anchored.

## **The plan will be put into effect and the personnel will be trained**

After a plan comes into effect, a number of interesting tasks will commence for the entire local military regiment. Natural maintenance and re-establishment initiatives will be commenced and adjustments to exercises will be implemented. It will then be time to gather experience in how the plan works in practise.

The task of taking care of the environment also requires training. To ensure that military personnel have the necessary knowledge about the nature and about the nature management of natural areas, the Armed Forces will arrange a nature care course for everyone working with maintenance of the environment in the Armed Forces' areas. During these courses, the principles of operation of the nature management plan will be examined and personnel will be trained in implementing the plan's directives.

*Maintenance of natural areas requires knowledge of the processes of nature. Armed Forces personnel at all levels can participate in a nature care course, as follow-up to the nature management plan.*

The Danish Armed Forces' firing ranges and exercise areas contain some of the best reserved natural areas in Denmark. They have been left to lie for decades, untouched by the intensification of agriculture on our farming land, and today they represent important sanctuaries for a number of rare and endangered species of plants and animals.

Long-term nature management plans are being drawn up for the Armed Forces' firing ranges and exercise areas aimed at safeguarding these areas as optimal training grounds, while at the same time conserving nature. The Danish Armed Forces and the Danish Forest and Nature Agency have jointly developed a unique concept which combines the training of soldiers with consideration for environmental protection and outdoor recreation.



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