Summary of key points

1. Substantial progress has been made over the past 20 years in halting or reversing declines in biodiversity across the UK, especially in the terrestrial and freshwater environments. Many factors have contributed to this success, including the establishment and management of protected areas, implementation of the UK Biodiversity Action Plan, and application of agri-environment measures.

2. In the marine environment, the status of biodiversity is less well understood but there is likely to be an ongoing decline in components of many marine ecosystems. A number of initiatives are now in place to gather better data on the status of marine habitats and species, to establish a network of protected areas, and to ensure that biodiversity conservation is supported by the wider marine policy framework.

3. The globally significant biodiversity of the UK’s Overseas Territories is severely threatened. A substantial increase in resources is needed to enable the Territories to counter habitat transformation, non-native species and other drivers of biodiversity loss.

4. One of the main challenges facing Government over the next decade will be to address the indirect drivers of biodiversity loss identified by the Millennium Ecosystem Assessment and to effectively integrate biodiversity conservation into other policy sectors, such as energy, transport and trade. The Ecosystem Approach, and associated tools such as economic valuation of ecosystem services, has an important part to play here.

5. The Invasive Non-native Species Framework Strategy contains the key elements for tackling the negative impacts of non-native species upon biodiversity in Britain. However, implementation will be challenging, and additional resources will be required to deliver tangible benefits.

6. Climate change is predicted to become a major driver of biodiversity loss in the UK. Robust approaches to both mitigation and adaptation will be required, supported by adequate resources. There will often be ‘win-win’ scenarios, whereby measures to protect biodiversity will also provide climate change benefits and other ecosystem services. However, some mitigation and adaptation activities may lead to biodiversity loss and it is important that full impact assessments are undertaken.

7. Global biodiversity may be adversely affected by UK activities such as trade, tourism and development aid. These issues merit increased attention to ensure that the UK makes a full contribution to achieving the global 2010 target.

8. Biodiversity conservation is a devolved responsibility in the UK but there remains an important UK co-ordination role, to which JNCC will make a major contribution.
Memorandum by the Joint Nature Conservation Committee, 3 June 2008

The Joint Nature Conservation Committee (JNCC) is the statutory adviser to Government on UK and international nature conservation, on behalf of the Council for Nature Conservation and the Countryside, the Countryside Council for Wales, Natural England and Scottish Natural Heritage. Its work contributes to maintaining and enriching biological diversity, conserving geological features and sustaining natural systems.

1. Is the Government on course to meet its 2010 biodiversity target?

1.1 The UK has signed up to 2010 biodiversity targets at both global and EU levels. However, in common with other countries, the UK contribution to each target has not been specifically and quantifiably identified. In line with the framework agreed by the Convention on Biological Diversity, the UK has developed a suite of biodiversity indicators that collectively represent the most important facets of the two 2010 targets.

1.2 The most recent publication of these indicators (Biodiversity Indicators in Your Pocket 2008\(^1\)) suggests that the UK is generally making good progress towards the 2010 targets. However, the indicators do not define the point at which the targets can be regarded as having been met.

1.3 JNCC has collated and assessed information from a wide range of sources to provide a comprehensive summary of the current status and trends in UK biodiversity\(^2\).

1.4 Recent trends in terrestrial and freshwater biodiversity are generally encouraging:

i. between 1960 and the mid-1980s about 30% of habitats and species suffered declines, largely attributable to habitat loss caused by agricultural intensification, increased land drainage, canalisation of water courses, eutrophication and other pressures that were all most pronounced in eastern and southern Britain;

ii. these declines had largely levelled out or been reversed by the 1990s but not without notable exceptions, including many upland ecosystems and losses attributable to eutrophication. These improvements are attributed to a reduction in lowland habitat loss, measures to improve both water and air quality, and a range of conservation-related measures;

iii. impacts attributable to climate change have recently become apparent, and look likely to account for more than half of the changes we will see to UK biodiversity after 2010.

1.5 Much less is known about the state of biodiversity in the marine environment. Available information suggests that:

i. as a result of the general intensification of fishing since the 1970s there is likely to be an ongoing decline in components of many marine ecosystems, in particular commercially-exploited fish and fragile seabed communities;

\(^1\) [www.jncc.gov.uk/biyp](http://www.jncc.gov.uk/biyp)

\(^2\) [www.jncc.gov.uk/pdf/comm07N03.pdf](http://www.jncc.gov.uk/pdf/comm07N03.pdf)
ii. populations of most cetaceans, seals and seabirds appear to be viable and generally stable;

iii. warming of the UK’s seas induced by climate change is contributing to many of the marine changes seen since the mid-1980s.

1.6 The biodiversity of the UK’s Overseas Territories (which is of global significance) continues to suffer significant declines:

i. there have been 39 recorded extinctions in the UK Overseas Territories (including one since the 2010 target was adopted) and two species are extinct in the wild;

ii. in the 2004 IUCN Red List, 80 species categorised as critically endangered occur in the UK Overseas Territories along with 73 endangered species and 158 vulnerable species. Many of these species are endemic and so are found nowhere else in the world.

2. How effective is the biodiversity monitoring and reporting process? Are the biodiversity indicators meaningful? Is there adequate data upon which to define targets and to assess progress?

How effective is the biodiversity monitoring and reporting process?

2.1 The UK has obligations to report on biodiversity arising from a variety of international wildlife conventions and EU directives. These reporting arrangements are diverse, and the UK Government, with the support of JNCC, is seeking to harmonise them and make them more efficient. The UK also aims to ensure that reporting is focused on biodiversity outcomes rather than activities.

2.2 The UK has a very extensive biodiversity monitoring and reporting process in the terrestrial/freshwater environment involving a large number of public and voluntary bodies. JNCC is developing a surveillance and monitoring strategy for terrestrial biodiversity on behalf of the wider UK biodiversity community and aims to contribute this to a similar strategy being developed by the Environment Research Funders’ Forum for the environment as a whole. The strategy has identified gaps in detecting biodiversity change, identifying the causes, and meeting the reporting needs of legislation and policy. These gaps could be met by improvements to habitat surveillance, and to aspects of some species surveillance, most significantly plants, invertebrates and fungi. The strategy aims to guide survey and monitoring effort to ensure that it is adequately balanced across requirements, different requirements can share solutions, and the identified gaps are, where possible, filled.

2.3 Monitoring in the marine environment is currently far from sufficient to report on biodiversity status and trends. The situation is not even across the marine environment: monitoring is generally better addressed (though with notable gaps) for seabirds, seals, (commercial) fish and plankton, whilst seabed habitats (particularly away from the coast) are very poorly addressed. As a contribution to the UK Marine Monitoring and Assessment Strategy, JNCC is leading the development of a strategy for monitoring biodiversity in the marine environment.

2.4 There is no comprehensive process for biodiversity monitoring and reporting across the Overseas Territories. However, some effective monitoring is in place. For example, in the south Atlantic Territories monitoring of breeding population trends is undertaken for most albatrosses.
Are the biodiversity indicators meaningful?

2.5 Biodiversity indicators are meaningful if interpreted and used in conjunction with other sources of information, including biodiversity research outputs, survey and monitoring data, and biological recording undertaken by volunteers. JNCC is involved in a number of projects to make this information more widely available, e.g. the National Biodiversity Network. Understanding the causes of change in indicators is essential if good policy decisions are to be taken.

2.6 At present, the suite of UK biodiversity indicators is too limited in scope to provide a sufficient measure of progress across the UK biodiversity resource as a whole. To address this, Defra is undertaking further development work to improve the scope and value of the indicator series.

Is there adequate data upon which to define targets and to assess progress?

2.7 Within the UK, targets for priority habitats and species have been set since first publication of the UK Biodiversity Action Plan in 1995. The targets have recently been revised to take account of new information, including updated status and trend data, and to determine the country contributions to each UK target. Progress towards the targets has been reported in 1999, 2002 and 2005 and will be reported again in 2008.

2.8 Good information is available to assess the conservation status of many priority habitats and species; in 2005, 40% of habitats and 60% of species were judged to have adequate monitoring data (or would have by 2008). However, in a significant number of cases (e.g. many marine habitats and species) available data are insufficient to set targets and report on progress with confidence.

3. Are the policy and institutional frameworks effective at protecting biodiversity? Is biodiversity protection addressed effectively at local and regional levels? How successful has the UK Biodiversity Action Plan been? Does Conserving biodiversity – the UK approach address the need to have a joined-up approach to biodiversity protection with the devolved administrations?

Are the policy and institutional frameworks effective at protecting biodiversity?

3.1 Within the UK there is a complex policy and institutional framework directly concerned with biodiversity conservation. This comprises components operating at various geographical scales: global, European, UK, national (i.e. countries within the UK) and local. These components are implemented through a range of practical conservation and related programmes, including protected areas, species protection measures and agri-environment schemes.

3.2 There have been some notable successes, as evidenced by the halt in the decline of many components of terrestrial and freshwater biodiversity since the mid-1980s (see 1.4 above). However, some major challenges remain, notably:

i. integrating biodiversity conservation into other sectors, as a key component of sustainable development;

ii. achieving a step change in marine nature conservation, e.g. through establishing a network of marine protected areas and greening the EU Common Fisheries Policy;

3 www.nbn.org.uk
iii. supporting the UK’s Overseas Territories and Crown Dependencies in contributing effectively to global biodiversity targets;

iv. ensuring that the impacts of UK activities on global biodiversity (e.g. through trade, tourism and development aid) are identified and mitigated or removed.

*Is biodiversity protection addressed effectively at local and regional levels?*

3.3 We have no comments on this question.

*How successful has the UK Biodiversity Action Plan been?*

3.4 The UK Biodiversity Action Plan (BAP) has been a success in driving progress towards the targets set for priority species and habitats: 57% of species and 60% of habitats have shown an improvement in status. The BAP has also provided the broad partnership and co-ordinating function necessary to embed the principles of biodiversity conservation across a wide range of sectors and interest groups.

*Does Conserving biodiversity – the UK approach address the need to have a joined-up approach to biodiversity protection with the devolved administrations?*

3.5 The focus of *Conserving biodiversity – the UK approach* is, quite rightly, on devolved implementation of biodiversity conservation that is tailored to the differing circumstances of each part of the UK. However, there is an explicit acknowledgement that a co-ordinated UK approach may sometimes be beneficial, e.g. in developing strategies for surveillance/monitoring and research, undertaking reporting, and setting common standards. JNCC has a key role to play in this respect.

4. *How well is biodiversity protection incorporated into the policy-making process? How well will the Ecosystem Approach Action Plan address this issue? Has there been enough progress in ensuring that the value of ecosystem services are reflected in decision-making?*

4.1 The biodiversity strategies for England, Scotland and Northern Ireland and the environment strategy for Wales each provide a framework for integrating biodiversity conservation into other policy areas. Good progress has made in some cases, such as agriculture, but in other areas achieving this integration in practice continues to prove challenging, e.g. policies on transport and energy do not fully address biodiversity concerns or indeed wider sustainable development principles.

4.2 The Ecosystem Approach is a key tool for achieving sustainable development. We believe that the Ecosystem Approach Action Plan will provide a sound platform on which to develop a robust approach to sustainability within Defra and across Government. By focusing on ecosystem values and environmental limits the Action Plan adopts an approach which enables the goods and services provided by the environment to be clearly expressed to policy-makers. This should help all Government departments to ensure that positive and negative environmental impacts on the natural environment are fully taken into account in policy development.

4.3 The Action Plan is important internationally as it provides a strong signal to other countries that the UK is committed to the implementation of the Ecosystem Approach (as required under the Convention on Biological Diversity), and that it can be incorporated successfully
into national and local planning. The Action Plan is unique globally and lessons learnt will provide extremely useful information to other governments and organisations internationally on implementation of the Ecosystem Approach and the incorporation of environmental values into policy and decision-making processes.

*Has there been enough progress in ensuring that the value of ecosystem services are reflected in decision-making?*

4.4 Work on the valuation of ecosystem services is critical to the wider adoption of the Ecosystem Approach Action Plan. Although research on valuation has been undertaken, applying it to real policy decisions (as is currently being done with the Marine Bill) is novel, and the lessons learnt will be invaluable. We strongly support Defra’s continued work in this area, in particular the dissemination of practical techniques for valuation across Government.

4.5 At present, our knowledge of how to value ecosystem services, the relationship between components of biodiversity and ecosystem services, and the impacts that ongoing changes to biodiversity might have on ecosystem services are all too poorly understood to allow policies to incorporate biodiversity requirements as much as they should. Work to address these gaps in knowledge is an urgent priority.

5. What are the key drivers of biodiversity loss in the UK, and is the Government addressing them?

5.1 The Millennium Ecosystem Assessment identified five direct drivers of global biodiversity loss: habitat change, climate change, invasive species, over-exploitation and pollution. Each of these is relevant to the UK, although the relative importance of each factor varies between ecosystems.

5.2 1.4 and 1.5 above summarise recent changes in UK biodiversity and their drivers, and more detail is available in the paper referenced in 1.3.

5.3 The condition of interest features on protected sites in the UK is monitored by the country nature conservation bodies following common standards agreed by JNCC. The results of the first six-year round of monitoring on terrestrial and freshwater sites found habitat change due to under-grazing (lowlands) and over-grazing (uplands) to be the biggest threat, followed by invasive species, water quality and management, and air pollution.

5.4 UK Biodiversity Action Plan reporting in 2005 identified habitat loss/degradation, infrastructure development, invasive species and climate change as the main current or emerging threats to priority habitats and species.

5.5 Fisheries, through over-exploitation, bottom-trawling and bycatch of non-target species, remain the most significant driver of biodiversity loss in the marine environment. Other factors include pollution, non-native species, construction and aggregate extraction, although the effects of these drivers are generally localised.

5.6 In the Overseas Territories the main threats to biodiversity are habitat transformation (often as a result of development, much of which is associated with tourism) and alien invasive species (many of which out-compete or predate native species).

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4 [www.jncc.gov.uk/page-3520](www.jncc.gov.uk/page-3520)
5.7 In general, the mechanisms necessary to address the direct drivers of biodiversity loss in the UK already exist. However, we re-emphasise that significant challenges remain (see 3.2), including securing adequate resources (see 9.1).

5.8 The Millennium Ecosystem Assessment also identified five indirect drivers of global biodiversity loss, which are the root causes of the direct drivers of loss: human population change, changes in economic activity, socio-political drivers, cultural factors and technological change, manifested in the UK by a desire to increase standards of living (with associated increases in the consumption of energy and natural resources) coupled with a steadily increasing population. Addressing these indirect drivers is hugely challenging, and can only be achieved by robust application of the principles of sustainable development across all sectors of the economy and society. The UK Government’s sustainable development strategy, *Securing the future*, represents an important move in this direction, although implementation of the strategy remains incomplete.

6. **Will the Invasive Non-native Species Framework Strategy prove effective? Is there adequate regulation and resources to prevent further invasions and to undertake eradication programmes?**

6.1 We believe that the GB Invasive Non-native Species Framework Strategy contains the key elements for tackling effectively the negative impacts of non-native species upon biodiversity in Britain (separate arrangements apply to Northern Ireland for dealing with non-native species on an all-Ireland basis).

6.2 It is difficult to pass judgement on the success of the strategy at present because of the relatively short phase of implementation. However, it is clear that successful implementation will require enhanced resourcing to enable Government agencies and others to respond effectively to newly-arrived problem non-native species and to manage the existing suite of damaging non-native species.

6.3 We recommend that the commercial sector and non-governmental organisations should be more fully incorporated within the co-ordination process (notably by widening the membership of the GB Programme Board responsible for non-native species), and that there is a clear process for taking rapid decisions when needed to deal with newly-arrived problem species. The delivery of improved eradication and control measures at a catchment and regional level will depend upon establishing effective partnerships.

6.4 Detecting newly-arrived problem non-native species requires better surveillance than is currently in place. The proposed surveillance scheme led by the Biological Records Centre, the British Trust for Ornithology and the Marine Biological Association should deliver this when it is properly established. Surveillance results will improve decision-taking and targeting of eradication and control measures.

6.5 An important role for the strategy is to ensure that information exchange and integration are properly co-ordinated at European and global levels, because contributing to a more strategic approach at these levels will assist effective implementation within GB.

6.6 Dealing with non-native species in the marine environment poses some particular issues (e.g. vector of introductions) for which a terrestrial or even freshwater approach may not be valid. Prevention of marine invasive non-native species is paramount, especially since eradication programmes are unlikely to be successful; any effort of co-ordination and co-operation at all levels (country to global) should be strongly promoted.
6.7 The Overseas Territories and Crown Dependencies have not been included in the GB Strategy, and no similar strategy has been developed for them. However, the prevention, control and eradication of invasive species is a high priority for many of the Overseas Territories.

6.8 Most Overseas Territories do not have adequate regulation or resources to prevent further invasions and to undertake eradication programmes. There have been some success stories, for example an FCO-funded feral cat eradication project on Ascension Island in the south Atlantic has led to the successful return of nesting seabirds to the main island. However, many problems remain and will require substantial funding to be addressed. For example, the Tristan Albatross and other seabirds are severely threatened by non-native mice. The eradication of mice is potentially feasible but will cost approximately £2 million.

7. What impact will climate change have on UK biodiversity? How might the impacts of climate change be reduced? How can potential conflict between climate change mitigation and adaptation measures and biodiversity protection be effectively managed?

What impact will climate change have on UK biodiversity?

7.1 The long-term effects of climate change on biodiversity are potentially enormous. For example, at a global level the Inter-governmental Panel on Climate Change has estimated that if mean temperature increases about 2-3°C above pre-industrial levels, 20-30% of plant and animal species assessed are likely to be at increasingly high risk of extinction.

7.2 Within the UK, some changes attributable to climate change have already been observed and others are indicated by modelling studies. These include:

i. changes in the timing of seasonal events such as flowering and hatching, potentially leading to problems such as lack of food for certain species;

ii. changes to species ranges, abundance and the habitats they occupy due to shifts in climate conditions;

iii. indirect impacts resulting from changes to land use (e.g. new crop types, and shifts between arable and livestock farming).

How might the impacts of climate change be reduced?

7.3 Climate change mitigation, through a substantial reduction in greenhouse gas emissions, will deliver benefits for biodiversity, as well as society more widely. In this context, co-ordinated international action is essential, and we support the strong leadership shown by the UK Government in pressing for a robust post-Kyoto agreement.

7.4 We welcome the UK Climate Change Bill but believe that the target to reduce CO₂ emissions by 60% by 2050 is inadequate and that there is a compelling case for an even more ambitious mitigation target. We are therefore glad to see the proposal that the Committee on Climate Change will review the target and will also consider the implications of including other greenhouse gases, and emissions from international aviation and shipping.

7.5 Whatever efforts are made to reduce greenhouse gas emission, past emissions mean that several decades of climate change are inevitable. Adaptation to unavoidable climate change is therefore essential. Key to this will be the maintenance or restoration of interconnected, dynamic and resilient ecosystems and their associated species that are best able to adapt to a changing climate. Actively restoring and managing ecosystems so they maintain these qualities will reduce their vulnerability to climate change. It will also be important to reduce other drivers of biodiversity loss (see section 5) if climate impacts are to be minimised.
7.6 Adaptation needs to be mainstreamed into all sectoral policies through cross-governmental agreement and action. Action is required at all levels of government, business and society to embed climate change adaptation into policies. We welcome Government’s intentions to develop a national framework for climate change adaptation.

How can potential conflict between climate change mitigation and adaptation measures and biodiversity protection be effectively managed?

7.7 In many cases, climate change mitigation, adaptation and biodiversity conservation will be complementary and mutually reinforcing. For example, protection and restoration of peatlands and semi-natural forests as components of extensive semi-natural ecosystems will protect vulnerable habitats and species, support climate change mitigation through carbon sequestration, and enhance resilience to the impacts of climate change, as well as providing other ecosystem services. However, successful implementation of this approach will require appropriate financial structures to be put in place (e.g. paying farmers to manage carbon) and a better understanding of the ecosystems being managed.

7.8 There are circumstances where climate change and biodiversity objectives are in conflict. For example, there is good evidence that cultivation of certain biofuel feedstocks causes significant damage to biodiversity (e.g. palm oil in south-east Asia). This highlights the need for a full impact assessment to be undertaken for proposed mitigation and adaptation measures to ensure there are no hidden negative consequences for biodiversity and the environment more widely.

8. Does planning policy adequately protect biodiversity? Are effective measures in place to ensure that Government plans for housing growth (including eco-towns) enhance rather than damage biodiversity? Should there be a review of greenbelt policy, and what might the consequences be for biodiversity? Do guidelines encouraging development on brownfield sites risk damaging biodiversity?

8.1 JNCC has no comments on this question.

9. Are there adequate resources for biodiversity protection and enhancement? Has the Government addressed the need to provide additional support for biodiversity protection in the UK Overseas Territories?

Are there adequate resources for biodiversity protection and enhancement?

9.1 It is clear that available resources are not currently sufficient to meet all the requirements of biodiversity conservation in the UK. Activities that would benefit from increased funding include:

i. marine nature conservation, especially to undertake survey and monitoring, to establish and enforce marine protected areas, and to underpin a system of marine planning;

ii. the prevention, control and eradication of non-native species;

iii. redirecting land use management to a system that rewards farmers for providing ecosystem services.

Has the Government addressed the need to provide additional support for biodiversity protection in the UK Overseas Territories?
9.2 The Overseas Territory governments and non-governmental organisations working in the Territories fund a number of biodiversity conservation projects. In addition, the UK Government funds environmental projects in the Overseas Territories through a joint DFID/FCO fund (the Overseas Territories Environment Programme, OTEP), worth approximately £1 million per annum. Defra has provided support for specific projects through the Darwin Initiative and other mechanisms.

9.3 JNCC has increased its support for nature conservation in the Overseas Territories over the past two years, using core funding provided by Defra and project funding from OTEP. In 2008/09, the budget for Overseas Territories work was approximately £200k.

9.4 The initiatives noted above are very welcome, but the budgets involved are generally small and/or are only intended to support short-term projects.

9.5 In 2007, RSPB produced a report, *Costing biodiversity priorities in the UK Overseas Territories*, which estimated that £16.1 million per annum would be needed to address biodiversity conservation priorities in the Overseas Territories between 2007 and 2011, far in excess of the resources currently available. At the request of the Inter-Departmental Ministerial Group for Biodiversity, JNCC has recently undertaken an exercise, in consultation with government officials in the Territories, to identify and cost nature conservation priorities in the Territories.

9.6 The main conclusions from this exercise are:

i. the conclusions of the RSPB study are broadly correct;

ii. the highest priority actions are a) to establish baseline information, through survey and monitoring, to inform decision-taking, b) to enhance capacity, and c) to eradicate/control invasive species;

iii. although the situation varies from Territory to Territory, there is a generic lack of resources (money and staff) to implement these actions;

iv. funding mechanisms need to be able to address long-term resource and capacity needs such as additional staff, long-term monitoring programmes, and measuring the effectiveness of projects;

v. a mechanism is needed to provide funding for ‘big spend’ ‘high biodiversity value’ projects (e.g. eradication of invasive non-native species).

10. Is the UK protected area network up to the job of maintaining biodiversity, now and into the future? Are arrangements to protect sites effective? Is more work needed to reduce habitat fragmentation and to link up those semi-natural habitat areas that remain?

10.1 Protected areas are an important mechanism for conserving biodiversity but have to be complemented by other measures, including wider environment initiatives and targeted action for threatened habitats and species.

10.2 The UK network of terrestrial and freshwater protected sites generally comprises the best areas for biodiversity. While there are some gaps in coverage, the suite of sites is substantially complete. The network of protected areas in the marine environment is much more limited,

and Government is actively pursuing a programme to extend this network to meet international and European commitments.

10.3 The network of protected areas in the UK has been broadly successful in meeting its aims. Habitats and species within protected areas appear to have declined much less than those in the wider environment. Current indications are that 66% of habitat features and 75% of species features in designated areas in the UK are in favourable or recovering condition.\(^7\)

10.4 However, the UK protected area network is not sustainable, especially in the face of climate change, without complementary wider countryside measures to support the coherence of the network. This will require initiatives to improve connectivity between sites (linear features and stepping stones, allowing the migration and dispersal of species), reduce habitat fragmentation, and ensure drivers of biodiversity loss do not operate at unsustainable levels.

*Are arrangements to protect sites effective?*

10.5 The European and national legislative framework and associated policies for terrestrial site management and protection are generally robust and effective. However, the relevant legislative and policy provisions to secure the appropriate protection of marine interests is less robust, primarily due to the implementation of the EU’s Common Fisheries Policy.

*Is more work needed to reduce habitat fragmentation and to link up those semi-natural habitat areas that remain?*

10.6 See 10.4 above.

\(^7\) [www.jncc.gov.uk/page-3520](http://www.jncc.gov.uk/page-3520)