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Species and Habitats Protection in U.S. Forest Planning

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Abstract

This paper assumes that Sweden in the future will consider legislation for forest landscape planning in order to more effectively protect forest biodiversity and promote a more differentiated forestry, *inter alia* intensive forestry in some areas exempted from certain legal restrictions. The purpose of the paper is to provide useful information for such legislative work, by describing and analysing the U.S. National Forest Management Act's "planning rule", and closely related legal instruments in the National Environmental Policy Act (Environmental Impact Statements etc.) and the Endangered Species Act. The paper specifically stresses the role of U.S. forest planning to diminish the risk for future clashes with the far-reaching restrictions in the Endangered Species Act. A similar, strategic and proactive forest landscape planning in Sweden could fill the function to avoid conflicts between specific forest activities (in particular logging) and the Species Protection Ordinance.

1. Introduction

This article focuses mainly on the U.S. "National Forest System", which comprises 781043 km², including 154 forests, 20 grasslands and one

prairie.¹ The national forests vary significantly in size. The largest forest is the Tongass (Alaska), more than 68 796 km². The smallest forest is Adak (Alaska) with only 33 trees. Most national forests are located in the west.

National forests cover a variety of nature types and provide habitats for many threatened and endangered species. National forests are all federally owned and managed by the U.S. Forest Service (established 1905), within the U.S. Department of Agriculture. 57 percent of the commercial timberland in the United States is privately owned, while federal, state, and local governments own 43 percent.²

The purpose of this paper is to provide information that may be useful if Sweden decides to introduce a legally based forest landscape planning, with the objective to protect forest biodiversity more effectively than today and to promote a differentiated forestry.

Forest planning exists for national forests in the U.S. since 1976, under the *National Forest Management Act* (NFMA).³ The paper describes the structure and main components of its "planning rule",⁴ and discusses how planning manag-

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¹ United States Department of Agriculture. Forest Service. <https://www.fs.usda.gov/planningrule>.

² Klein A, Cheever F, Birdsong B C, Klass A B, Biber E. (2018). *Natural Resources Law: A Place-based Book of Problems and Cases* (Aspen Casebook), fourth Edition, Wolters, Kluwer, p. 286.

³ 16 U.S.C. §§ 1600-1687.

⁴ NFMA § 1604. As the NFMA is unknown to most Swedish readers, the text in the paper is in parts very descriptive.

es the protection of biodiversity (part 4). Before that, the paper presents a short background to forest management in the U.S., including some relevant statutes other than the NFMA (part 2–3).

The *Endangered Species Act* of 1973 (ESA)⁵ is closely related to forest planning under the NFMA, and to forest management in general. As a possible Swedish legislation on forest landscape planning also would intimately relate to the specific legislation on protection of species and habitats, this paper includes a relatively long section on the Endangered Species Act and its relation to forest planning (part 5). A separate part (6) analyses how the ESA can restrict the use of privately owned forestry land.

Finally, in view of the previous examination, the paper discusses issues that would be relevant to consider in a possible legislative work on a future Swedish legislation for forest planning (part 7). A few summarising remarks completes the article (part 8).

2. The development of U.S. federal forestry law

The history of the U.S. federal forest law during the 20th century reflects a controversy between the interest of short term demand for timber production on one hand, and the interests of sustainable and multiple use forest management on the other hand, including protection of species and habitats and recreation values. According to Glicksman, for the first two-thirds of the 20th century, the laws governing the management of national forests were vague and general, providing broad discretion for the Forest Service. The Service had long acted as a “protective custodian” of national forests, but shifted its approach in the mid-1940 when the demand for timber increased in the post-World War II economy. Despite a highly growing interest in recreation

in forests, the Service started to promote intensive forestry techniques (including clearcutting, extensive use of herbicides and mono-cultural reforestation), that “tended to be the most environmentally destructive”.⁶

Klein et al. describes the development of the U.S. federal forestry law as an interaction between Congress, as legislating body, and the courts.⁷ The “Monongahela case” (*Izaak Walton League v. Butz*, 522 F.2d 945 (4th Cir. 1975)) is in this context an important milestone. Local and national environmental groups sued the Forest Service for violating the provisions of the *Forest Service Organic Act*,⁸ by entering into contracts for the sale of timber from the Monongahela National Forest, located in the mountains of West Virginia. Based on the understanding that the 1897 act aimed to halt the historical wasteful exploitation of national forests, the court made a literal, narrow reading of the provisions. The Forest Service should select for cutting only specific trees (marked and designated) that were dead, physiologically mature or large and only allow such cutting that would preserve young and remaining growing timber. The court ruled that the Forest Service had not complied with the statutory text. The Court thereby rejected the Forest Service’s broader interpretation of the provisions.⁹ As the Monongahela case, with its tree-by-tree standard, invalidated many timber practices in national forests, the forest industry argued strongly for a change by the Congress.¹⁰ This pressure resulted in substituting the Forest Service Organic Act with the NFMA 1976.

⁶ Glicksman R L (2009). *CPR Perspective: National Forest Management*, p. 2. <http://www.progressivereform.org/perspForest.cfm>.

⁷ Klein et al., p. 292 ff.

⁸ 16 U.S.C. § 476, 30 Stat. 35 (1897).

⁹ Klein et al., p. 302 f. See also *Zieske v. Butz*, 406 F. Supp. 258 (D. Alaska 1975) where also the tree-by-tree standard was applied.

¹⁰ Klein et al., p. 307.

⁵ 16 U.S.C. § 1531 et seq.

The courts continued to intervene after the adoption of the NFMA, e.g. in cases where plaintiffs have questioned the Forest Service's compliance with the provisions on planning in the NFMA and with the requirements in the ESA.¹¹

3. Applicable federal law related to management of forest biodiversity

– overview

The NFMA is the chief statute for planning of national forests.¹² The first planning rule under the NFMA was adopted in 1979. It was revised in 1982 in order to include fish and wildlife management. Several revisions have followed since then and the current planning rule is from 2012.¹³ Land management plans are adopted for each national forest.¹⁴ Federal Regulations from 2012, issued by the Department of Agriculture, stipulate in detail the content and procedure in the planning process (hereafter: Planning Regulations).¹⁵ Forest planning under the NFMA very often includes an Environmental Impact Statement (EIS), a procedure regulated under the *National Environmental Policy Act* (NEPA).¹⁶ The corresponding procedure in Europe is Environmental Impact Assessments (EIA).

The NFMA is formally an amendment to the federal *Forest and Rangeland Renewable Resources Planning Act* (RPA) of 1974.¹⁷ The RPA requires

long-range planning by the Forest Service in order to ensure the future supply of forest resources while maintaining a quality environment. Although the RPA is the legal basis for forest planning, it is the NFMA, and especially its “planning rule”, that is of particular importance for this article.

The *Multiple Use – Sustained Yield Act* (MUSYA)¹⁸ of 1960 was a reaction to the wide discretion for the Forest Service provided by the 1897 Forest Service Organic Act, leading to neglect of environmental interests in the forest management after the mid 1940's.¹⁹ The MUSYA requires that national forests be administered for “outdoor recreation, range, timber, watershed, and wildlife and fish purposes”. It also requires forest yields to be “sustainable”. However, although the act specifies certain environmental interests, the discretion for forest planning under the MUSYA is very wide, due to its “multiple use” principle.²⁰ The NFMA planning rule and the Planning Regulations are more specific.

Legislation with the purpose to protect nature interact with forestry planning and management. The ESA lists endangered and threatened species and requires designation of critical habitats. As will be analysed below, the ESA restrictions can have extensive impact on forestry.²¹ Furthermore, the *Wilderness Act* of 1964²² empowers the Congress to create wilderness reserves on federal land. Forestry can be restricted in wilderness areas. There are today more than 141639 km² of wilderness reserves within the national forests.²³ There is in the U.S. also a complex system for protecting nature within national parks, preserves etc. on federal, state and local

¹¹ Ibid, p. 312 ff.

¹² NFMA includes various provisions on planning in subchapter I. Subchapters II-IV (Research, Extension Programmes and Wood Residue Utilization). These are not studied here.

¹³ For a brief history of the planning rule, see Schulz C A, Sisk T D, Noon B R, Nie MA (2013). *Wildlife Conservation Planning Under the United States Forest Service's. 2012 Planning Rule*, *Journal of Wildlife Management* 77(3):428-444, 2013, p. 429.

¹⁴ § 1604.

¹⁵ 36 CFR Part 219, Subpart A – National Forest System Land Management Planning. NFMA 1604(g) is the legal base for the Planning Regulations.

¹⁶ 42 U.S.C. §§ 4321-4347. Below, part 4.5.

¹⁷ P.L. 93-378.

¹⁸ P.L. 86-517.

¹⁹ Schulz et al., p. 434. See also above, part 2.

²⁰ § 531. Below part 4.7.

²¹ Below, parts 6 and 7.

²² P.L. 88-577.

²³ <https://www.hg.org/forestry-law.html>.

level. Although such protection includes also forests, it will not be examined here.

4. National Forest Management Act – The Planning Rule

4.1 Scope – Federal land

The NFMA and its “planning rule” applies directly only to federal forestland. This is an important delimitation as the management of private forests make up 57 percent of commercial timberland. Additionally, State and local governments manage considerable areas of forests within the U.S.

Still, there are several connections between the management of federal forests and the management of non-federal forests. The Planning Regulations stipulate that forest plans shall guide sustainable, integrated management of the resources within the plan area “in the context of the broader landscape”.²⁴ Furthermore, the Forest Service shall, besides planning under section 1604, work out and adopt a “renewable resource programme”.²⁵ This programme is based upon a comprehensive assessment of the current and future uses of not only federal, but also private and state owned forests, regarding e.g. environmental and economic impacts and coordination of multiple use and sustained yield opportunities as provided in the MUSYA.²⁶ Such information – e.g. on an expected future clearcutting of a privately or state owned forest hosting a particular habitat – can influence the planning of a nearby national forest.

Furthermore, when the Forest Service is planning and monitoring federal forests, it must cooperate and coordinate with the management of non-federal forests.²⁷ More specifically, when

developing standards and guidelines in a plan in order to maintain viable populations of species, the “responsible officer shall coordinate to the extent practicable with other federal, State, Tribal, and private land managers having management authority over lands relevant to that population”.²⁸

4.2 Three levels of forestry planning

The NFMA provides a three tier planning system, with *national strategic planning* at the highest level.²⁹ The plan establishes goals, objectives, performance measures, and strategies for management of the national forests in general.³⁰

Next level is the *unit planning*,³¹ resulting in “land management plans” for a particular national forest area, which can vary significantly in size.³² The land management plans do not formally authorize specific projects, such as logging of a forest stand. Instead, they specify the multiple-use goals that apply to each area and requirements for managing wildlife, watersheds etc. They designate areas that will not be available for logging, but they do also indicate areas that are suitable for forestry. They determine allowable volumes of timber to be cut, as well as harvesting and regeneration methods. The plans include both binding standards and guidelines. Maps are attached to the plan.³³

The third level is *site-specific plans* directly re-

Government “should be a catalyst to encourage and assist these owners in the efficient long-term use and improvement of these lands and their renewable resources consistent with the principles of sustained yield and multiple use”, NFMA § 1600(5).

²⁸ Planning regulations § 219.9(b)(2)(ii). See also § 219.10(a)(4); coordination with adjacent private land as regards e.g. “joint management objectives”.

²⁹ The Chief of the Forest Service is responsible.

³⁰ Planning Regulations § 219.2(a).

³¹ Planning Regulations § 219.2(b).

³² Above, part 1.

³³ The “supervisor” of the administrative unit is normally responsible for development and adoption of the plan.

²⁴ Planning regulations § 219.1(b).

²⁵ NFMA §§ 1601–1602.

²⁶ NFMA § 1600(3).

²⁷ See e.g. NFMA § 1604(a) and Planning Regulations § 219.12(a). Furthermore, it is stipulated that the Federal

lated to specific projects and other activities, e.g. a forest stand planned for logging.³⁴ Site-specific plans must be consistent with both higher planning levels. They may explicitly constrain the Forest Service from authorising or carrying out projects and activities, or the manner in which they may occur. Where conflicts with a site-specific plan arise, there are several options, inter alia, to modify or reject the project (activity) or to amend the plan.³⁵

4.3 Scientific approach

Science plays a crucial role in U.S. forest planning. It is a criterion in the NFMA that planning is based upon a “systematic interdisciplinary approach to achieve integrated consideration of physical, biological, economic, and other sciences”.³⁶ An “interdisciplinary team”, making inventories of the applicable resources of the forest, shall prepare plans,³⁷ making use of the “best available scientific information”. As the planning requires consideration of habitats and species (below, part 4.7), the inventories need to include also these resources. Furthermore, it must be recorded what was determined to be the best available scientific information, the basis for that determination, and how the planner applied this information.³⁸

Ryan et al. have investigated how the requirement for “best available scientific information” has been applied in practice in connection with forest planning. They conclude that forest assessments “address the required topics, although the depth and treatment varies across cases”. Approaches to “best available scientific information” rely on “peer reviewed informa-

tion, agency technical reports and syntheses; and personal expertise and judgement”.³⁹

4.4 An adaptive planning process

National forest planning is an iterative process. The intent is to “create a responsive planning process that informs integrated resource management and allows the Forest Service to adapt to changing conditions, including climate change, and improve management based on new information and monitoring.”⁴⁰ This adaptive management⁴¹ process consists of three, partly overlapping, parts:⁴²

- i. The *assessment* evaluates rapidly the existing information about relevant ecological, economic, and social conditions, trends, and sustainability and their relationship to the land management plan, within the context of the broader landscape. The Forest Service assesses, inter alia, terrestrial and aquatic ecosystems; air, soil, and water resources and quality; system drivers (e.g. climate change); carbon stocks; threatened, endangered, proposed and candidate species; social, cultural, and economic conditions; ecosystem services; recreation values; and areas of tribal importance. The assessment process includes

³⁹ Ryan C M, Cervený L K, Robinson T L, and Blahna D J (2018). Implementing the 2012 Forest Planning Rule: Best Available Scientific Information in Forest Planning Assessments, *Forest Science* 64(2):159–169, doi: 10.1093/forci/fxx004, p. 159.

⁴⁰ Planning Regulations § 219.5(a).

⁴¹ Adaptive management is frequently debated in U.S. social science literature, for and against. Doromeus recommends adaptive management to be used only when it promises to improve management outcomes sufficiently to justify the additional costs it imposes, Doromeus H (2011). Adaptive Management as an Information Problem. *North Carolina Law Review*, Forthcoming; *UC Berkeley Public Law Research Paper* No. 1744426. Available at SSRN: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1744426.

⁴² Planning Regulations § 219.5(a)(1-3).

³⁴ Planning Regulations § 219.2(c). The supervisor or district ranger is normally the responsible official.

³⁵ Planning Regulations § 219.15(b)-(c).

³⁶ NFMA § 1604(b).

³⁷ NFMA § 1604(f)(3).

³⁸ Planning Regulations § 219.3.

participation by different governmental and non-governmental bodies.

An assessment is required both when new plans are developed and when exiting plans are revised. It is within the Forest Service's discretion to determine the scope, scale and timing of an assessment (as regards e.g. the existence of species and habitats).⁴³ However, this issue is closely connected to information that may be *required* from the Service in an EIS (below, part 4.5) and, where listed species or their habitats are concerned, in the consultation process according to the ESA (below, part 5.3).

- ii. The next part is *developing, amending or revising a plan*. The Forest Service shall develop and adopt a new land management plan for each new national forest unit. In line with adaptive management, the Service shall revise each land management plan at least every 15 years. A plan revision results in a new plan for the entire plan area. Developing and revising a plan includes public participation and necessitate often an EIS-procedure.

Besides revision, it is possible to amend existing plans at any time, in order to keep them current and to adapt to new information or changing conditions. An EIS or similar documentation may be required in connection with an amendment, depending on its scope and scale and its likely effects.⁴⁴

- iii. The responsible official shall develop a *monitoring* program for the plan area and include it in the plan. The Planning Regulations include quite detailed requirements for monitoring. The monitoring information should enable the responsible official to determine if a plan needs to be changed.⁴⁵ Monitoring

is obviously a necessary component of adaptive management.

4.5 Forest planning and Environmental Impact Statements

Forest planning is a federal agency action that often involves an EIS procedure under the NEPA.⁴⁶ Regulations specify certain types of proposed forestry actions normally requiring an EIS, inter alia, a proposal "that would substantially alter the undeveloped character of an inventoried roadless area or a potential wilderness area" e.g. in connection with harvesting.⁴⁷ In other situations, the Forest Service must do an "environmental assessment" (EA) to determine whether it can rule out "significant environmental impact". If it cannot, an EIS is required.⁴⁸ It is in this context important that the Planning Regulations require an assessment before the plan is developed, and monitoring of an already planned forest area. These procedures may provide useful information for the primary EA judgement.

An EIS shall "provide full and fair discussion of significant environmental impacts, including both direct and indirect effects and their significance". The EIS shall also include "reason-

⁴⁶ 36 CFR Chapter II, part 220. There are certain "Categorical Exclusions", where EIS or EA are exempted, but these are normally not applicable in connection with a forest planning decision; 36 CFR Chapter II, part 220.6 and 40 C.F.R. § 1508.4.

⁴⁷ 36 CFR Chapter II, part 220.5.

⁴⁸ According to the Council of Environmental Quality Regulations, EA is a more simple process. It shall include "brief discussions of the need for the proposal, of alternatives as required by section 102(2)(E), of the environmental impacts of the proposed action and alternatives, and a listing of agencies and persons consulted". One of the function of EA is to "[b]riefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact" (40 CFR 1508.9). In this context, the scoping process is essential. Scoping is an "early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action", 40 CFR 1501.7.

⁴³ Planning Regulations § 219.6.

⁴⁴ Planning Regulations § 219.13(a).

⁴⁵ Planning Regulations § 219.12.

able alternatives, which would avoid or minimize adverse impacts or enhance the quality of the human environment". In addition, the EIS shall inform about possible impacts of the discussed alternatives, as well as possible mitigation means.⁴⁹ Thus, if the Forest Service in a proposed plan has set aside a forest area for the purpose of logging, possible impacts on different species and habitats must be included in the EIS as well as possible alternative areas for logging. Such information is crucial in relation to the protection of listed species according to the ESA and the protection of critical habitats for such species.⁵⁰

The EIS process involves participation of different stakeholders, including the public, who can criticise and bring in additional information into the process. The public shall have the opportunity to comment on the draft EA and draft EIS as well as other points in the in EIA preparation process.⁵¹ Any person affected by a decision made under NEPA (e.g. the content of an EIS), is entitled to bring the conflict to court for a judicial review.⁵²

4.6 Plan components

Every plan must include certain components, specified in the Planning Regulations:⁵³

- *Desired conditions*: the desired social, economic, and/or ecological characteristics of the plan area.
- *Objectives*: a concise, measurable, and time-specific statement of a desired rate of progress toward a desired condition. Objectives should be based on reasonably foreseeable budgets.
- *Standards*: a mandatory constraint to be ap-

plied when deciding upon a project or activity. The purpose of the standard is to achieve or maintain the desired conditions, to avoid or mitigate undesirable effects, or to meet applicable legal requirements. To illustrate, the following standard is used for protection of the bald eagle (Mark Twain National Forest): "Designate a ¼ mile permanent old growth corridor along the waters' edge of Table Rock Lake and Lake Wappapello (traditional bald eagle wintering areas)."⁵⁴

- *Guidelines*: a constraint on project and activity decision-making, but with a possibility to depart from its terms, so long as the purpose of the guideline is met. This is an example of guideline related to protection of the bald eagle (Mark Twain National Forest): "Maintain trees with characteristics of suitable roosts (i.e., dead or dying with exfoliating bark or large living trees with flaking bark) wherever possible with regard for public safety and accomplishment of overall resource goals and objectives."⁵⁵
- *Suitability of lands*: identification of lands as suitable for various multiple uses or activities. The identification is based on the desired conditions for those lands. The plan will also identify lands within the plan area as not suitable for uses incompatible with the desired conditions for those lands. Consequently, every plan must identify those lands that are not suitable for timber production, but also lands that are suitable for more or less intensive timber production.

⁴⁹ See further 40 CFR 1502.1 and 1502.16.

⁵⁰ Below, part 5.

⁵¹ *Anderson v. Evans*, 371 F.3d 475, 487 (9th Cir.2004) and *Citizens for Better Forestry v. U.S. Dept. of Agriculture*, 341 F.3d 961, 970 (9th Cir.2003).

⁵² Administrative Procedure Act, 5 U.S.C. § 702.

⁵³ Planning Regulations § 219.7(e)(1)(i).

⁵⁴ https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsm8_045308.pdf, p. 2:6.

⁵⁵ Ibid.

4.7 Protection of biodiversity and other public interests to be considered in forest planning

It is of particular interest for this study to see how forest planning manages biodiversity and other conservation values in relation to other competing interests. The concepts “multiple use”, “sustainability” and “sustained yield” are relevant in this context, as well as the specific biodiversity requirements related to species and ecosystems.

Multiple use

It is the task of the Forest Service to manage national forests in accordance with the two principles of the MUSYA, “multiple use” and “sustainable yield”. The definition of multiple use in the MUSYA is very broad:

“The management of all the various renewable surface resources of the national forests so that they are utilized in the combination that will best meet the needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; that some land will be used for less than all of the resources; and harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output.”⁵⁶

The MUSYA definition, in itself, obviously provides the Forest Service with wide discretion in planning, taking into account the preconditions

in each area.⁵⁷ As the court puts it in *Perkins v. Bergland* 1979, the multiple use concept “breathes discretion at every pore”.⁵⁸

What are the multiple use interests to consider in the planning? The MUSYA summarises them as “outdoor recreation, range, timber,⁵⁹ watershed, and wildlife and fish purposes”.⁶⁰ However, the Planning Regulations are more specific, and add other interests, such as aesthetic values, air quality, cultural and heritage resources, ecosystem services, forage, geologic features, grazing and rangelands, habitat and habitat connectivity, riparian areas, scenery, soil, surface and subsurface water quality, trails, vegetation, renewable and non-renewable energy and mineral resources and infrastructure.⁶¹

Furthermore, the plan must include components, including standards or guidelines, for *integrated* resource management to provide for ecosystem services and multiple uses in the plan area. In other words, ecological, social, and economic factors must be considered in concert.⁶²

Sustainability

Forest planning “must provide for social, economic, and ecological sustainability”, consistent with the inherent capability of the plan area.⁶³ The Planning Regulations are most developed in regards to ecological sustainability. Plan components shall be used to “maintain or restore structure, function, composition, and connectivity”. Social sustainability includes e.g. recreation.

⁵⁷ Planning Regulations 219.1(b).

⁵⁸ *Perkins v. Bergland* (608 F. 2d 803 – Court of Appeals, 9th Circuit), 1979.

⁵⁹ § 219.11 include specific requirements for timber production, related to e.g. quantity.

⁶⁰ MUSYA, § 1, see also NFMA 1604(e)(1). MUSYA (adopted 1960) expanded the interests that the Forest Service must consider compared to what was required according to the 1897 Forest Service Organic Act.

⁶¹ Planning Regulations § 219.10.

⁶² Planning Regulations § 219.10(a) and § 219.19.

⁶³ Planning Regulations § 219.8.

⁵⁶ MUSYA, sec. 4(a).

Economic sustainability includes local, regional, and national economies. An important question is how ecological, social and economic sustainability relate. The Planning Regulations stipulate that plans should guide the management of national forest lands “so that they *are* ecologically sustainable and *contribute* to social and economic sustainability” (my italics).⁶⁴ The wording indicate that ecological sustainability is prior to social and economic sustainability.

Sustained yield

With reference to the MUSYA, forests should be developed and administered for “sustained yield of the several products and services”. It includes “the achievement and maintenance in perpetuity of a high level annual or regular periodic output of the various renewable resources of the national forests without impairment of the productivity of the land”.⁶⁵ The legal text hinders logging and other forest activities based solely upon a short-term demand for timber. A sustained yield necessitates a long-term understanding of land productivity.

Biodiversity

The protection of forest biodiversity in forest planning is to a considerable extent related to legal requirements in the ESA (see further part 5), but there are important provisions also in the Planning Regulations. In assessment and planning, the Forest Service shall adopt “a complementary ecosystem and species specific approach” or, as Schulz et al. put it, “a combined coarse- and fine-filter approach”.⁶⁶ The “coarse filter” approach concerns ecosystem integrity and diversity.⁶⁷ Plan components must function

to maintain or restore ecosystem structure, function, composition, connectivity, key ecosystem characteristics, rare species communities, and native tree diversity. The coarse filter’s focus on ecosystems and habitats is intended to provide for adequate protection of federally listed threatened and endangered species, proposed and candidate species (all under the ESA), and to maintain a viable population of each species of conservation concern within the plan area. However, where the coarse filter is deemed insufficient, the “fine filter” approach shall supplement with protection measures on the species level including, inter alia, buffer areas around specific nest sites.

The Planning Regulations and in particular the coarse filter and fine filter approaches aim to prevent clashes with the restrictions in the ESA. Part 5.4 elaborates on this proactive planning function.

Conclusion

In a historical perspective, the Forest Service has periodically paid more attention to the short-term economic interest of timber production than to different conservation interests.⁶⁸ With that in mind, Schulz et al. stress the importance of clear substantive requirements in the plan.⁶⁹ They conclude that, if the requirements are not “specific, measurable, binding and enforceable, history suggests that effective wildlife conservation planning will end up as a secondary objective”.⁷⁰ This is presumably a correct analysis and a wise recommendation. It is in this respect relevant that the 2012 Planning Regulations com-

⁶⁴ Planning Regulations § 219.1(c).

⁶⁵ MUSYA § 2 and § 4(b).

⁶⁶ Schulz et al., p. 432.

⁶⁷ § 219.9(a). Ecosystem integrity and diversity are defined in § 219.19.

⁶⁸ Above, part 2. However, see Glicksman R L (2014). *Wilderness Management by Multiple Use Agencies: What makes the Forest Service and the Bureau of Land Management Different?* GW Law School Public Law and Legal Theory Paper No. 2014-42. Glicksman argues that the Forest Service historically has been more receptive to wilderness preservation than the Bureau of Land Management.

⁶⁹ Schulz et al., p. 434.

⁷⁰ *Ibid*, p. 435.

plete the wide multiple use concept in MUSYA. The regulations put much weight on conservation values, especially the protection of species and habitats, which is substantiated by the coarse filter and fine filter approach based on scientific assessments. The interest to satisfy short-term demand for timber is not in itself an objective in the legislation. It is also relevant here that an EIS typically is required when conservation values are threatened and that the ESA triggers prohibitions when listed species or critical habitats are in danger (below, part 5). These provisions altogether should influence the Forest Service to formulate plan standards related to conservation that are “specific, measurable, binding and enforceable”, and presumably counteract the path dependence risks indicated by Schultz et al.

5. Forest planning and the Endangered Species Act

5.1 General

The ESA includes very far reaching restrictions of land and water utilisation, including forestry, with the aim to protect endangered and threatened species and their habitats. The Supreme Court expressed the harsh nature of the act in the famous “Snail Darter” case from 1978, halting the construction of the multi-million dollar Tellico Dam in order to save the habitat of an endangered fish species. According to the Court, “the plain intent of Congress in enacting [the ESA] was to halt and reverse the trend toward species extinction, whatever the cost.”⁷¹ Congress has amended the ESA several times after the “Snail Darter” case, in order to create more flexibility. The Trump administration has recently suggested some revisions, inter alia, to shrink the size of designated critical habitats and to weaken the protection of threatened species. The proposed

changes are debated.⁷² Still, even if the U.S. Congress accepts these proposals, the ESA will internationally uphold the position as a statute with very far reaching restrictions, not least as private landowners are not entitled to compensation (below part 6).

The ESA applies to land and water areas irrespective of ownership. The Federal Wildlife Service (FWS)⁷³ and the National Marine Fisheries Service (NMFS)⁷⁴ are chief responsible for the implementation of the act. Forest management issues concern primarily the FWS and the following text will refer only to this agency.

This part does not provide a complete analysis of the ESA. It covers (not in detail) the main instruments: listing of species and designation of critical habitats (article 4), the control of federal agency actions (article 7), the general prohibition of “taking” listed species (article 9) and the possibility to depart from this prohibition in cases of incidental taking (article 10). These articles are related to forest planning of federal land (national forests), conducted by the Forest Service. Articles 9 and 10 ESA applies also to forestry on private land. This is further discussed in part 6.

5.2 Listing of species and designation of critical habitat

The purpose of the ESA is not merely to protect certain species individuals but also the ecosystems upon which those species depend.⁷⁵ Still, it is the listing of species of wild fauna or flora that triggers the different protection instruments in the Act. Based on certain criteria,⁷⁶ the ESA differentiates between certain categories of species.

⁷¹ *Tennessee Valley Authority v. Hill*, 437 U.S. 153 (1978).

⁷² ENDANGERED SPECIES: Trump admin proposes regulatory overhaul – Thursday, July 19 – www.eenews.net.

⁷³ Under Secretary of Interior.

⁷⁴ Under Secretary of Commerce.

⁷⁵ ESA § 2(b).

⁷⁶ ESA § 4(a)(1).

Most important are “endangered” and “threatened” species.⁷⁷ Both categories are listed. There are also species under consideration for such listing, so-called “candidate species”.⁷⁸

When the FWS has listed a species as endangered or threatened, the authority shall make two strategic conservation decisions: to designate a “critical habitat”, and to create a “recovery plan” for the species, including, inter alia, site-specific conservation measures.⁷⁹ A critical habitat is, primarily, areas with “physical and biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection”. A critical habitat may include also an area not occupied by the species at the time for listing.⁸⁰

Some species, such as certain woodpeckers, owls and other beasts of prey, occupy large areas in which they search for food etc. However, normally, a critical habit shall not include “the entire geographical area which can be occupied by the threatened or endangered species”.⁸¹ In addition, the FWS shall designate a critical habitat “after taking into consideration the economic impact, and any other impact”.⁸² Therefore, although the FWS is obliged to designate critical habitat, strong opposite interests may force the agencies

to limit the size and thereby the ecological functionality of the habitat.

According to Schulz et al., in 2013, 430 species in the national forests were listed as threatened or endangered (there were 60 candidate species). More than 6470 km² of terrestrial habitat and 35 000 km of stream habitat on national forest land were designated as critical habitat under ESA.⁸³

5.3 Forest Service actions and consultations with FWS

Section 7 – “Interagency Cooperation” – is a cornerstone among the instruments in the ESA.⁸⁴ The Forest Service, as any other federal agency, shall “insure that any action authorized, funded, or carried out”, inter alia a forest plan

“is not likely to jeopardize the continued existence of any endangered species or threatened species
or
result in the destruction or adverse modification of habitat of such species”.

In order to comply with this *no-jeopardy requirement*, the Forest Service shall consult with FWS in connection with the planning. This is a rather thorough consultation process, in which the Forest Service must use the best available scientific and commercial data.⁸⁵ If there are listed species “in the area”, the Forest Service shall conduct a “biological assessment”, in order to identify possible endangered species or threatened species that the plan is likely to affect.⁸⁶

⁷⁷ ESA § 4(a)(1), § 3.6 and § 3.20. “Endangered” is a species “which is in danger of extinction throughout all or a significant portion of its range”. “Threatened” is a species “likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range”.

⁷⁸ ESA § 4(b)(3). According to FWS, “candidate” species are plants and animals for which FWS has sufficient information on their biological status and threats to propose them as endangered or threatened under the Endangered Species Act (ESA), but for which development of a proposed listing regulation is precluded by other higher priority listing activities; https://www.fws.gov/endangered/esa-library/pdf/candidate_species.pdf.

⁷⁹ ESA § 4(f)(1).

⁸⁰ ESA § 4(a) and § 3(5)(A).

⁸¹ ESA § 3(5)(B).

⁸² ESA § 4(b)(2).

⁸³ Schulz et al., p. 439.

⁸⁴ See more in detail: U.S. Fish & Wildlife Service and National Marine Fisheries Service (1998). *Endangered Species Consultation Handbook, Procedures for Consultation and Conference Activities Under Section 7 of the Endangered Species Act*. Cited here: Handbook ESA section 7.

⁸⁵ ESA § 7(a)(1)(2).

⁸⁶ ESA § 7(c)(1).

The formal consultation process under section 7 is in practice normally preceded by an informal consultation process where, inter alia, the existence of listed or candidate species and designated or proposed critical habitats are investigated, as well as the possible effects of an activity. If the informal consultation of, inter alia, a future forest plan leads to the conclusion that forest activities (such as logging) are likely to “affect” the concerned species or habitats, a formal consultation is necessary.⁸⁷

The formal consultation process follows a specific order.⁸⁸ After an initial consultation period, normally 90 days, the FWS shall provide a draft biological opinion. If the opinion concludes that listed species or their critical habitat is threatened, the FWS shall suggest “reasonable and prudent alternatives”, which they believe would not violate the no-jeopardy requirement mentioned above (e.g. by suggesting an alternative forest area for logging). After a Forest Service review of the draft biological opinion, the FWS ends the consultation process by delivering a final biological opinion, including:

- a description of the proposed action,
- the status of the species and critical habitat,
- the “environmental baseline”, comprising effects of past and ongoing factors leading to the current status of the species, their habitats and the ecosystem, but not including effects of the proposed action,
- effects of the proposed action and cumulative effects of future State, tribal, local and private actions that are reasonably certain to occur in the concerned area.⁸⁹

If after considering these factors the FWS concludes, that a forest plan is “likely to jeopardize

the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species”, the Forest Service may not adopt the forest plan.⁹⁰

Section 7 can occasionally allow a forest plan to include a so-called “incidental take” of a species. It is necessary to explain this special situation further. The background is the general “taking prohibition” under the ESA section 9. Taking includes “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” “Harm” is of particular interest here as it, according to regulations under the ESA, includes “significant habitat modification or degradation which actually kills or injures fish or wildlife by significantly impairing essential behavioural patterns, including, breeding, spawning, rearing, migrating, feeding or sheltering”.⁹¹ This provision is not completely clear; the FWS has to decide on a case-by-case basis if a modification actually “kills or injures fish or wildlife”. E.g., if there are other similar habitats in the region, the agency may consider these to satisfy a continued existence of the species.

Furthermore, there is an exemption from the taking prohibition, for such taking that is “incidental” to and not the purpose of the action. This exemption is relevant to commercial forestry; in case of e.g. a logging of a forest stand with breeding sites, the purpose of the action is to get timber while the habitat modification is incidental to the action. It is then necessary to comply with certain restrictive preconditions in order to grant an incidental take permit (ESA section 10, see further part 6). However, in a consultation under section

⁸⁷ Handbook ESA section 7, chapter 3, describes the informal consultation.

⁸⁸ Ibid, section 7, p. 4-3 (Figure 4-1).

⁸⁹ See more in detail, *ibid*, 4-22 – 4-33.

⁹⁰ ESA § 7.

⁹¹ 50 CFR Part 222. See also *Babbitt v. Sweet Home Chapter of Communities for a Great Oregon, et al.*, No. 94-859. Supreme Court upheld the FWS definition of “harm” to include “adverse modification” of habitat.

7, this is not sufficient. Irrespective of section 10, a forest plan does not comply with section 7 if an incidental taking is “likely jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species” (no-jeopardy requirement).⁹²

It is an important function of the consultation process to avoid violation of the no-jeopardy requirement, by searching for reasonable and prudent alternatives. However, if the interagency cooperation eventually fails to find alternatives, and the no-jeopardy requirement consequently is triggered, an exemption may occasionally be granted by the “Endangered Species Committee”,⁹³ also called the “God Squad”. The Committee was established under the ESA in 1978, as a political reaction to the far-reaching economic impacts of the outcome in the “Snail Darter” case. In order to grant an exemption, the action must be of regional or national significance, no reasonable and prudent alternative shall be available for the action, and the benefits of the action must clearly outweigh the benefits of any alternative consistent with conservation of the species.⁹⁴ The exemption cases have been few in practice, presumably because the consultation process normally solve potential conflicts.⁹⁵ The Committee has e.g. exempted a project concerning the sale of timber from a forest area that was a critical habitat of the Northern Spotted Owl (a court later annulled the decision for formal reasons).⁹⁶

⁹² As a matter of policy, the FWS require that an incidental take statement be included in all formal consultations (except for plants), Handbook ESA section 7, p. 4–46.

⁹³ ESA § 7(e). The Committee includes seven members (six from the US Cabinet).

⁹⁴ See more in detail: ESA § 7(h).

⁹⁵ Baur D C and Irvin W R (2002). *The Endangered Species Act: law, policy and perspectives*, American Bar Association.

⁹⁶ *Portland Audubon Society v. Endangered Species Committee*, Court of Appeals for the Ninth Circuit 984 F.2d 1534

5.4 The role of proactive forest planning under the NFMA in relation to the ESA restrictions

The Planning Regulations stipulate that plans “must comply with ... the Endangered Species Act”.⁹⁷ In addition, as mentioned above, the regulations include their own provisions for protection of forest biodiversity, requiring the Forest Service to plan for the viability of endangered, threatened and candidate species. As emphasised in *Seattle Audubon Society v. Evans* 1991, it is not sufficient for the Forest Service to focus narrowly on one species alone (in this case the Spotted Owl). The planning must adopt a broader approach that includes the *entire ecosystem*.⁹⁸ More specifically, the Forest Service shall use standards and guidelines in the plans, to implement primarily the coarse filter approach (ecosystem integrity and diversity components) and, secondly, the fine filter approach (species-specific components) mentioned above.⁹⁹ Specific habitats shall be protected, but also forest-wide requirements are needed, e.g. to maintain a certain amount of old growth or to prohibit certain forestry practices.

The biodiversity protection rules in the forestry planning legislation has an important preventive function in relation to the more reactive and crises-based ESA restrictions. A preventive planning can significantly reduce the risk for species degradation and avoid high costs for late recovery measures. Such planning can therefore deter the FWS from listing a candidate species. This necessitates a preventive planning with standards that are not merely vague, voluntary,

(9th Cir. 1993). The Court found that three members of the Committee had been in contact with the U.S. President George H.W. Bush regarding the conflict, a violation of the Administrative Procedures Act.

⁹⁷ Planning Regulations § 219.1(f).

⁹⁸ *Seattle Audubon Society v. Evans*, 1991 WL 180099 (W.D. Wash. 1991).

⁹⁹ Part 4.7.

speculative or unenforceable (*Oregon Natural Resources Council v. Daley* 1998).¹⁰⁰ Clear, precise and enforceable standards in a land management plan can also be relevant in the application of section 7, when determining whether a project is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of their habitats.¹⁰¹

Schulz et al. mentions several cases where the FWS has decided not to list a particular species or has made a no-jeopardy determination (above, part 5.3), because of the standards and other regulatory mechanisms in a forest plan.¹⁰² Case law has recognised this connection between the ESA and effective forest plan standards.¹⁰³ The reverse is also true; there are cases where FWS has listed species partly due to the lack of binding and detailed standards in forest plans.¹⁰⁴

Preventive planning can be a factor in FWS decisions to delist a species.¹⁰⁵ Again, this depends on how clearly the plan standards reflect the coarse filter (ecosystem) approach and, where necessary, the additional species-specific approach.¹⁰⁶

A controversial example historically is the delisting of the grizzly bear. This species was listed 1975, partly due to the lack of clear and enforceable requirements in the forest plans. Following a conservation strategy for the bear, the Forest Service amended several plans and included habitat standards. This led to a delisting

decision by the FWS, which was first repealed by a district court because of inadequacy of the standards but, after appeal, approved by the Ninth Circuit, who found the standards sufficient under the ESA, because they were legally enforceable and binding for forest management in the areas concerned (*Greater Yellowstone Coalition v. Servheen* 2011).¹⁰⁷

In sum, there is a close connection between forest planning and the ESA. Whether or not forest planning plays the intended proactive role depends on the Forest Service's ambition to formulate precise and adequate standards, which is emphasised in both case law¹⁰⁸ and literature. As Schultz et al. says: "Legally binding and enforceable standards promote accountability and provide increased certainty about future management actions".¹⁰⁹

6. Private forestry and ESA

– some remarks

As mentioned,¹¹⁰ the NFMA forest planning does not directly concern private land. In contrast, the ESA applies to all land irrespective of ownership. There are certain differences compared to the Swedish legal situation that are useful to highlight here as a possible Swedish forest landscape plan would, directly or indirectly, imply restrictions for private landowners in order to protect certain species and their habitats.

The consultation process under ESA section 7 (see part 5.3 above) applies to a private project only if this is subject to authorisation or funding by a federal agency. However, there is no general authorisation of forest activities on private land and federal funding of private forestry is rare. Instead, the *general* prohibition in section 9 on

¹⁰⁰ Compare above, part 4.7.

¹⁰¹ ESA § 7(a)(2).

¹⁰² Schulz et al., p. 440.

¹⁰³ *Pacific Coast Federation of Fishermen's Association v. National Marine Fisheries Service* 2001.

¹⁰⁴ Schulz et al., p. 440.

¹⁰⁵ Delisting of species is not very frequent in practice: <https://ecos.fws.gov/ecp0/reports/delisting-report>. See also Epstein Y (2018). *Adversarial Legalism and Biodiversity Protection in the United States and the European Union*, *Transnational Environmental Law*, 491-513, Cambridge University Press, doi:10.1017/S2047102518000109, p. 16.

¹⁰⁶ Planning Regulations § 219.9(b).

¹⁰⁷ Schulz et al., p. 441.

¹⁰⁸ *Oregon Natural Resources Council v. Daley*, 16 F. Supp. 2d 1256 (1988).

¹⁰⁹ Schultz et al., p. 439.

¹¹⁰ Part 4.1.

“taking” listed species applies to private as well as other landowners.¹¹¹ As mentioned (part 5.3), one form of taking is “harm”, including “significant habitat modification or degradation which actually kills or injures fish or wildlife”.¹¹² Logging and forestry activities may be regarded as “harm”, although the circumstances in each case determine if the modification or degradation “actually kills or injures fish or wildlife”.

However, as “harm” of a species typically is incidental to (not the purpose of) a forestry action, a private forest owner can apply for an incidental take permit according to section 10. The FWS can grant such a permit only if several preconditions apply. The applicant must produce a “conservation plan”, on which the public can comment, ensuring that the anticipated take of a listed species will be minimized or mitigated by conserving the habitat upon which the species depend, thereby contributing to the recovery of the species as a whole.¹¹³ More specifically, the conservation plan and other documentation must prove that

- i. the taking will be incidental;
- ii. the applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such taking;
- iii. the applicant will ensure that adequate funding for the plan will be provided;
- iv. the taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild;
- v. the required measures will be met; and
- vi. there are “such other assurances ... that the plan will be implemented”.¹¹⁴

¹¹¹ ESA § 9(a)(1)(B). The rule applies to endangered species. FWS has expanded the prohibition to most threatened species in regulations.

¹¹² 50 CFR Part 222.

¹¹³ U.S. Fish & Wildlife Service. Habitat Conservation Plans Under the Endangered Species Act. <https://www.fws.gov/endangered/esa-library/pdf/hcp.pdf>.

¹¹⁴ ESA § 10(a)(2)(A).

To conclude, as “harm” sometimes is the result of logging and other activities, and as the preconditions for receiving an incidental take permit are restrictive; ESA constitute considerable obstacles to such private forestry activities that may negatively affect endangered and threatened species’ habitats. Furthermore, where the FWS grants an incidental take permit, the required conservation plan imposes restrictions on land use and costs. A subsequent question is therefore whether landowners are entitled to compensation from the Federal Government for infringement of their property rights, because of the restrictions.

No legislation in the U.S. explicitly specifies the situations where landowners are entitled to compensation for restrictions in the land use. The question is instead if restrictions under the ESA trigger the so-called “takings clause” in the constitution (The Fifth Amendment), which prohibits the federal government from taking property for public use without “just” compensation. The U.S. courts must then decide if a regulation constitutes a “taking” after a balancing of interests, in which the so-called *Penn Central Test* provides the most guidance.¹¹⁵ The court then weighs the “character of the government action” against the economic burden for the property owner. However, so far, no verdict has recognised restrictions under the ESA as a regulatory taking.¹¹⁶ The legal situation the U.S. is therefore very different from Sweden (see further below, part 7.6).

¹¹⁵ The test derives from the case *Penn Central Transp. Co. v. New York City*, 438 U.S. 104 (1978).

¹¹⁶ There is no place for further analyses of the takings clause in this paper, see e.g. Davis M J and Glicksman R L (1989). To the Promised Land: A Century of Wandering and a Final Homeland for the Due Process and Takings Clauses, *Oregon Law Review*, Vol. 68, p. 393. See also and Polasky S and Doromeus H (1998). When the Truth Hurts: Endangered Species Policy on Private Land with Imperfect Information, *Journal of Environmental Economics and Management* 35, p. 25 f.

7. What can Sweden learn from US forest planning law?

7.1 Basic preconditions in Sweden

The legal requirement under the “planning rule” in the NFMA, to adopt, review and monitor strategic and operational forest plans, has no counterpart in Sweden today. However, forest planning in Sweden is part of voluntary certification systems. Many forestry operations in Sweden are certified through the Forest Stewardship Council (FSC) or the Programme for the Endorsement of Forest Certification (PEFC). Both organisations require a forest management plan. In the planning, the forest manager is obliged to consider also the ecological landscape perspective, according to some certification criteria.¹¹⁷

Several differences between the Swedish certification and the U.S. NFMA planning are relevant when considering landscape ecological aspects. Certification is voluntary. Although many forest managers in Sweden participate in the FSC or the PEFC, single uncertified forest stands can play a vital role in the forest landscape ecosystem, e.g. by hosting a habitat with key importance for the landscape connectivity. A legal forest planning in Sweden would cover all forest stands in the designated forest landscape, as the U.S. NFMA planning does.

Furthermore, the focus is different. Certification standards are addressed to each individual forest manager who is directly responsible only for his or her forestland, which presumably affects also how and to what extent landscape ecological aspects are considered in the planning. The NFMA assessments and planning in land management plans focus directly on the entire forest landscape preconditions.

The planning structure and the planning administration is different. NFMA planning is a hierarchy where national general rules govern the development of strategic regional land management plans, which in turn are binding for site specific plans and individual projects. A federal agency is responsible for the forest planning in the U.S. (on federal land), not the landowner as in the Swedish certification system. Finally, the NFMA, with its interconnections to the NEPA and the ESA, stipulates a detailed forest planning process, which includes, inter alia, a scientific approach and public participation. This is a clear difference to the Swedish certification.

It is assumed here that the certification systems are considered insufficient to fulfil Sweden’s international and EU obligations on protection of biodiversity, and the national environmental quality objectives related to biodiversity (such as “Living forests”). It is also assumed that a new Swedish legislation on forest planning will be considered to improve the fulfilment. The U.S. system may then serve as inspiration, as regards how to structure the legislation and what components to include.

The planning rule in the NFMA applies only to federally owned lands, while a Swedish legislation would apply also to private lands. More than 75 % of the Swedish forests are privately owned. This generates additional legal questions for Sweden. Nevertheless, the U.S. legislation related to forest planning is relevant to pay regard to in a Swedish legislative investigation, as the potential conflicts between different public interests in connection with forestry are the same, not least the relation between forestry and protection of species and habitats.

¹¹⁷ <https://se.fsc.org/se-se/standarder/svensk-skogsbruksstandard> (under item 6) and <https://pefc.se/wp-content/uploads/2017/12/PEFC-SWE-002-Skogsstandard-2017-12-15.pdf>

7.2 A hierarchy of three level, adaptive planning

The three level forest planning under NFMA provides a top down approach, where the upper level governs the lower level planning.¹¹⁸ Regulations on national level serve the function to determine the general substantial requirements, procedures etc. in order to provide for certain consistency in the planning of different areas. A regional (in U.S. "unit") land management planning level focuses on the forest landscape irrespective of administrative borders.¹¹⁹ The operational, site specific planning level determines preconditions for specific forest stands. This hierarchy forest planning system would obviously be new for Sweden and counteract the present forest policy principle "freedom under responsibility" for forest owners. The argument for a three level hierarchy planning in Sweden would be the need to accomplish important public interests, inter alia, to fulfil international and, in particular, EU obligations related to protection of species and habitats.

Three components in the NFMA planning – "assessment", "developing, amending or revising a plan", and "monitoring" – constitute a system of adaptive forest management on federal land.¹²⁰ As planning decisions related to nature typically are made under more or less uncertainty of the consequences, due to unpredictable events (not least in relation to climate change) and new knowledge, adaptive management would be useful also in a Swedish forest planning. The adaptive approach is already an essential part in the Swedish implementation of

the Water Framework Directive and the Marine Strategy Framework Directive.

7.3 Governing the planning

The proactive function in forest planning

The listing of endangered and threatened species and the designation of critical habitats under the ESA affect forest activities.¹²¹ ESA Section 7 is particularly important. It is almost impossible to allow a forest activity that, despite mitigation measures, is "likely jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species". The power for the Endangered Species Committee to grant an exception according to ESA section 7 will presumably apply very rarely. Instead, the appropriate remedy to prevent clashes with the reactive ESA is a *proactive* forest planning, in order to early and strategically protect the forest ecosystem and where needed impose recovery measures. The NFMA coarse filter approach serves to maintain or restore ecosystem qualities, such as connectivity between habitats. The fine filter is supplementary and used when there is a need for additional protection of particular species habitats (e.g. buffer zones near breeding sites).

The background is similar in the EU and Sweden. The Birds and Habitats directives prohibits the destruction or damage of breeding sites and resting places. The Swedish Species Protection Ordinance implement these prohibitions. Following the EU Commission guidelines, this does not entail a protection of every single habitat. Instead, it is sufficient to safeguard an "ecological functionality" of different breeding sites and resting places.¹²² However, in Sweden,

¹¹⁸ Above, part 4.2.

¹¹⁹ In Sweden, water management plans under the Water Framework Directive apply to water basins irrespective of administrative borders for counties and municipalities.

¹²⁰ Above, part 4.4.

¹²¹ Above, part 5.4.

¹²² Directorate-General for Environment. Guidance Document on the Strict Protection of Animal Species of Community Interest under the Habitats Directive 92/43/EEC,

the prohibitions to destroy or damage breeding sites and resting places are applied case-by-case and in a “first come, first served” manner, meaning habitats are exploited one by one until the ecological functionality is deemed to be threatened. There is no initial overall assessment of the landscape indicating protection priorities. There are also continuous conflicts with the species protection prohibitions in individual cases, reflected in court decisions.¹²³ The EU Commission recommends a proactive and strategic forest management in order to prevent such clashes and to provide for more rational, strategic protection. The Commission points out forest planning as a useful instrument in this respect.¹²⁴ The experiences from the U.S. forest planning as a functioning proactive instrument, provided that clear and enforceable plan standards are used,¹²⁵ further strengthens the argument for forest planning in Sweden.

Discretion and balancing of interests

Although the ESA forces the Forest Service to protect listed species and critical habitats in its planning, and indirectly promotes a proactive strategic biodiversity planning, there are also frequent situations where different conservation interests and other public interests can compete and, often, be combined. The “multiple use” concept in the MUSYA, supplemented by the more

detailed Planning Regulations, provides considerable discretion for the Forest Service in finding the most appropriate combination of uses with regard to the preconditions in each case.

Likewise, apart from the situations where protection is legally necessary, flexibility and discretion in a Swedish planning legislation would allow the Forest Authority to make priorities with regard to local and other preconditions. This should provide for more differentiated forestry than today. E.g., the plan could designate areas with insignificant conservation interests as suitable for intensive forest cultivation, which can be motivated for the climate policy interest of producing biomass.

In order to force the planning authority to assess (but not necessarily satisfy) certain important interests, these can be specified in the forest planning legislation, as is done in the U.S. Planning Regulations¹²⁶ and e.g. the Swedish Plan and Building Act.

7.4 Providing adequate information

The U.S. planning system includes several tools aiming to ensure sufficient quality of information for planning decisions. Both the assessment and monitoring phases fulfil that function.¹²⁷ Furthermore, the obligation to make use of the “best available scientific information”, involving physical, biological, economic, and other sciences, imbues the planning process in the NFMA. An interdisciplinary team shall prepare the plans. In addition, the Forest Service is obliged to use the best scientific and commercial data available according to the ESA, when assessing if a proposed forest activity is likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of a

p. 41. Available online: http://ec.europa.eu/environment/nature/conservation/species/guidance/pdf/guidance_en.pdf. Hereafter: EU Commission Guide.

¹²³ Forsberg M (2018). Landskapsplanering för naturvård och virkesproduktion – särskilt med koppling till ersättningsrätten, *Nordisk miljörättslig tidskrift* 2018:1, s. 81 ff. See also Michanek G, Bostedt G, Ekvall H, Forsberg M, Hof A R, de Jong J, Rudophi J and Zabel A (2018). Landscape Planning—Paving the Way for Effective Conservation of Forest Biodiversity and a Diverse Forestry? *Forests* 2018, 9(9), 523, <https://www.mdpi.com/1999-4907/9/9/523/htm>. Hereafter Michanek et al.

¹²⁴ EU Commission Guide, pp. 40 and 32.

¹²⁵ Above, part 5.4.

¹²⁶ Above, part 4.7.

¹²⁷ Above, part 4.4.

habitat of such species.¹²⁸ Likewise, private forest owners are also obliged to provide adequate and extensive biological and other information in a conservation plan, when applying for an incidental take permit according to the ESA.¹²⁹

The close relation to the NEPA is obviously important in order to provide information quality. An EIS is often required in connection with forest planning. The purpose is to extort useful information concerning the possible impacts on biodiversity and other environmental interests, on available reasonable alternatives and on mitigation measures.

It is necessary to consider how to provide adequate information also for a possible forest planning law in Sweden. Planning based upon high quality scientific knowledge should facilitate the selection of alternatives, not least which of several habitats to protect in an area. Such high quality knowledge is important also for landowners, in order to avoid restrictions that are not justified or proportional. The combination of coarse filter, e.g. in order to assess the ecological functionality of habitats, and a supplementary fine filter is perhaps useful also in a Swedish forest planning. However, this paper will not discuss in detail the appropriate assessment methodologies for Sweden.

As in the U.S., the link between a Swedish forest planning and Environmental Impact Assessments (EIA) is crucial. The Environmental Code [Miljöbalken 1998:808] Chapter 6 regulates Environmental Impact Assessments (EIA), for projects ("project EIA") as well as for plans and programmes ("strategic EIA"). A project-EIA is currently normally not required for regular logging within forestry. However, if Sweden adopts a forest landscape planning legislation, a strategic EIA will be required as soon as a plan is expected

to cause significant environmental impact ("betydande miljöpåverkan").¹³⁰ This is decided on a case-by-case basis, taking into account several factors, inter alia, if the EIA would be significant for compliance with environmental legislation, such as the protection of species and habitats according to the Species Protection Ordinance. Other factors to consider are e.g. probable environmental impacts and their extent.¹³¹ Although the Swedish EIA legislation provides for some discretion, a strategic EIA would presumably be required quite often. This would entail a new situation for Swedish forest management.

7.5 Public participation and access to justice

The NEPA EIS process involves participation by authorities, the public and the concerned landowners. Participation provides for transparency and improved information quality. Participation is also a recurrent component throughout the NFMA planning process itself, under the Planning Regulations.¹³²

Participation would be an even more important issue in a Swedish forest planning legislation, as the planning presumably would encompass also privately owned land. The participation of landowners is probably necessary in order to accomplish a rational planning. Also other stakeholders (such as certain authorities and environmental organisations) can contribute to information quality. An EIA process in connection with planning will require public participation in terms of hearings etc.

Another important aspect to discuss further in connection with a new planning legislation is the right for certain authorities, landowners and environmental organisations to challenge a planning decision in court. Appeals are important not

¹²⁸ Above, part 5.3.

¹²⁹ Above, part 6.

¹³⁰ Environmental Code, Ch.6, § 3.

¹³¹ Environmental Assessment Regulations [miljöbedömningsförrordningen], § 5.

¹³² Above, part 4.4.

only for the appellant. As indicated above, the U.S. courts have historically clarified several legal aspects of forest planning. However, there is not room in this paper to elaborate on participation and access to justice issues.

7.6 Private landowners and compensation

Private forest owners are not only concerned by rights to participation and access to justice, but also of the right to be compensated when forestry is restricted in connection with the protection of species and habitats. This is an issue in U.S. when private forestry is restricted under the ESA (NFMA planning, however, applies only to federal lands). Similarly, in Sweden, landowners sometimes claim right to compensation when habitats are protected under the Environmental Code. In the future, the compensation issue can also be actualised in connection with planning of private forestland, but this is depending on if the plan restrictions are legally binding or not for the landowners.

As already indicated,¹³³ the legal situation in Sweden and the U.S. differs significantly. Landowners are not compensated in the U.S., as restrictions under the ESA are not regarded as a governmental “regulatory taking” (takings clause). This is particularly important when the FWS has designated areas of forests as “critical habitat”. The legal situation is different from Sweden where, basically, restrictions on ongoing land use for the purpose of nature protection entitles to compensation if the restriction is significant, which is normally the case in connection with forestry.¹³⁴ The landowner is then entitled

to compensation up to 125 % of the market value of the estate.¹³⁵

Swedish landscape planning would be dependent on the legal principles for compensation stipulated in the Constitution. As these for the landowner relatively generous principles seem to gain support from a clear majority in the Swedish parliament, they are very unlikely to change in a foreseeable future. A landowner’s right to compensation is and will therefore impose a considerable obstacle to the protection of biodiversity at times where state financial resources for nature conservation are scarce, unless it is possible to achieve financing through other means or land is protected voluntarily.¹³⁶ Contrary to the Swedish authorities for nature conservation, the U.S. federal agencies can impose conservation requirements on private landowners without budget restrictions. However, there is another side of the coin. Polasky and Doromeus argue that the lack of compensation in the U.S. in connection with the ESA restrictions is a disincentive for landowners to cooperate with conservation authorities and to provide accurate information on e.g. species and habitats on private land.¹³⁷ Landowners have also little incentives to provide to maintain or improve a habitat and may even prefer to destroy it in order to preempt regulation.¹³⁸ It is therefore argued that subsidies and releases may improve cooperation with land-

tion is regarded as “significant” (depending on the size of the habitat).

¹³⁵ It is not legally clear if the prohibitions following from the Swedish Species Protection Ordinance entitle to compensation, where the prohibitions derive from EU law. Possibly, a landowner would be entitled to compensation based on general legal principles, in light of the Constitution chapter 2, section 15. The breeding sites and resting places protected by the Ordinance have a relatively small size.

¹³⁶ Michanek et al. (2018), part 6.

¹³⁷ Polasky and Doromeus, p. 41 f.

¹³⁸ Lueck D and Michael J A (2003). Preemptive Habitat Destruction Under the Endangered Species Act, *Journal of Law and Economics*, vol. XLVI.

¹³³ Above, part 6.

¹³⁴ The legislation does not entitle to compensation in cases when the Species Protection Ordinance directly hinders activities that may damage breeding sites or nesting places, e.g. in forests. However, it is possible that courts on the bases of general legal principles would accept a demand for compensation, provided the restric-

owners, and stimulate active participation in the work to maintain and restore habitats.¹³⁹

8. Summarising remarks

By analysing the structure and crucial components in the U.S. NFMA planning rule and related legislation, this article intends to provide useful information to be considered in a possible future elaboration of a Swedish forest planning legislation. Legal constructs for multi-level planning, adaptive management, high scientific quality and participation are some of the important features to reflect upon.

The article specifically stresses the role of forest planning in strategic conservation of the forest ecosystem and its species and habitats, in order to more effectively manage forest ecosystems and avoid clashes with specific legislation on species protection. U.S. forest planning fulfils this proactive function and a Swedish forest planning law could do the same, at least if

planning requirements are clear and enforceable. However, a strict protection is not needed always. From a wide geographical perspective, forest landscapes in both the U.S. and Sweden vary considerably and provide for different kinds of uses. The U.S. planning legislation is rooted in a multiple use concept, furnishing considerable discretion for the Forest Service to balance different interests and finding combinations of uses with regard to local and other preconditions. A similar construction in Sweden would provide for more varied use. Not least important from a climate policy perspective could be for the planning to identify those forest areas that have only negligible conservation values. The plan would inform authorities where it is possible to allow such intensive forest cultivation that – if politically desired and decided – is exempted from normal legal nature conservation requirements and some other forest management restrictions.

¹³⁹ This issue cannot be discussed here, see e.g. Langpap C, Kerkvliet J and Shogren J (2018). The Economics of the U.S. Endangered Species Act: A Review of Recent Developments, *Review of Environmental Economics and Policy*, volume 12, issue 1, Winter 2018, pp. 69–91 doi: 10.1093/reep/rex026, p. 79 ff.

