



An evaluation of agency conservation guidelines to better address planning efforts by local government

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Abstract

In North America and Europe, land-use decisions that affect wildlife habitat often are made at the local government level. Natural resource conservation agencies have little regulatory authority to influence these decisions, but frequently are asked to provide scientific support because local jurisdictions do not have staff with the necessary background in wildlife ecology. Some of this scientific support comes through technical publications and guidelines that are developed by agencies to address city and county planning issues. Little information is known about the usefulness of these materials to the planning community. We surveyed planners in Washington State, U.S.A. to determine their use and perception of a series of technical publications developed for local planners by the Washington Department of Fish and Wildlife (WDFW). We found that planners often use these publications as technical guidance for environmental planning activities required by the state. However, they found the guidelines to be less useful for site-scale projects and for urban planning projects. Our results indicate that conservation agencies and those working with local governments should consider developing guidelines for the variety of settings in which planners work and that these guidelines should consider a wider range of habitats and species.

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1. Introduction

State wildlife conservation agencies in the United States are charged with conservation of fish and wildlife

populations, communities, and habitats. In the United States, longstanding tradition has given most authority for land-use decision-making to individual landowners and local jurisdictions (Duerksen et al., 1997; Porter, 1997). An important role of agencies, such as the Washington Department of Fish and Wildlife (WDFW), is to assist local governments in making land-use decisions by providing technical guidance on wildlife conservation issues.

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Washington is typical of many U.S. states in the number of natural resource-oriented land-use regulations that local governments are required to observe. Such laws regulate land-uses impacting forests (Forest Practices Act), rare and or declining species (Endangered Species Act), and marine and inland shorelines (Shorelines Management Act). In addition, the Washington legislature enacted a law to limit the effects of human expansion on areas considered critical for a variety of reasons (Washington State Office of Community, Trade and Economic Development, 2003a). This law, known as the Growth Management Act (GMA), required cities and counties to develop local regulations to help sustain habitat for state listed fish and wildlife species (Washington State Office of Community, Trade and Economic Development, 2003a). Although jurisdictions were free to craft their own regulations, the state required that all regulations incorporate the Best Available Scientific (BAS) information into local ordinances (Washington State Office of Community, Trade and Economic Development, 2003b). Best Available Science was defined as research conducted by qualified individuals using documented methods that lead to verifiable results and conclusions (Washington State Office of Community, Trade and Economic Development, 2002). Jurisdictions failing to incorporate BAS could be exposed to legal challenges and face penalties such as loss of their state highway and transportation revenue. Consequently, many cities and counties looked to state resource agencies for technical assistance to help meet their legal obligations and reduce the chance of facing courtroom challenges (Loew, 2000).

To assist local governments in meeting these requirements, WDFW developed a series of publications known as *Management Recommendations for Washington's Priority Habitat and Species* (PHS). This publication series is intended to provide planners, elected officials, landowners, and citizens with comprehensive information about species and habitats that are of high conservation priority in Washington. These publications were developed by compiling current scientific information and were made available to jurisdictions as a resource to help them comply with GMA requirements. The agency's goal was to ensure these publications met Washington's BAS requirements. The agency also recognized the importance of ensuring that individuals with a limited background in ecology could easily understand PHS.

Conservation agencies have used similar approaches in providing wildlife conservation guidelines for local planning authorities in North America (Venno, 1991; Department of Fisheries and Oceans et al., 1994; Hobbs et al., 1994) as well as in Europe and Australia (Nature Conservancy and Council, 1987; David Tydsley and Associates, 1994; Lunney et al., 2000).

Although there are examples of wildlife conservation information prepared for local governments internationally, we found little information on how the planning community uses and perceives these guidelines. One exception is a survey by Cort (1996) that centered on conservation agency officials' experiences with local planners. But WDFW had little background in the type of planning that local jurisdictions regularly encountered. So, to help determine if PHS guidelines were adequately addressing the major issues faced by Washington's planning community, we surveyed planners involved in activities that could impact fish and wildlife habitat.

Our survey was designed as a case study to understand how members of the planning community use and perceive conservation guidelines developed for use by local governments. Based on previous discussions with planners in Washington, we predicted that an individual planner's work setting and responsibilities would influence their use of the guidelines. Our survey of planners was also intended to identify problems with existing publications, so that we could address such concerns in future PHS documents.

Our survey addressed four research questions:

1. How are the use of PHS guidelines influenced by the work setting and responsibilities of planners?
2. For which planning activities are the PHS guidelines primarily used?
3. What do planners perceive as strengths and weaknesses of the PHS guidelines?
4. How can PHS be improved to make it more useful to planners?

2. Methods

2.1. Selection of potential respondents

We obtained the membership lists of three professional planning organizations (American Planning

Association (APA)—Washington Chapter, Washington State Association of Counties, The Washington State Association of County and Regional Planning Directors). We combined these three groups to create a mailing list and distributed an 18-question survey to 1200 individuals who represented local governments and private consulting firms that work with local jurisdictions. Potential respondents were asked to return the survey within 1 month in a self-addressed stamped envelope.

2.2. *Work setting and planning responsibilities*

We asked respondents to identify their current employer, the primary responsibilities of their job, and the location of their job. These questions were followed with a single question about the respondent’s knowledge of the PHS guidelines. Only respondents who had a working knowledge of the guidelines were asked to complete the remainder of the survey.

2.3. *Ability of PHS to address planners’ needs*

We met with WDFW staff who had worked with local governments to develop a list of issues that should be addressed in the survey. We then interviewed a group of six planners that had experience using the PHS guidelines. We asked them to review and revise the list. Their recommendations were compiled into a

Table 1
Major issues concerning PHS guidelines identified by WDFW staff and local government planners

PHS guidelines issues
More quantifiable data needed
Address landscapes/populations
Need to more effectively address conservation within urban areas
Provide more guidance on what can and cannot be done within a buffer
Update publications more regularly
Guidance on methods to best implement recommendations in PHS guidelines
Involve planners in the review process when developing PHS guidelines
More information dealing with habitat restoration
Better address the scale at which planners work
Develop management recommendations for species of local importance

list of issues concerning the PHS guidelines that we incorporated as questions in the survey (Table 1).

Planners responded to a multiple-choice question on how frequently they used PHS. We also asked them to rate how well PHS addressed four long-range and 10 project-level planning activities (Table 2). Given four choices, planners rated how well PHS addressed these activities on a scale of always valuable, usually valuable, sometimes valuable, or rarely valuable.

We asked respondents to rank the effectiveness of PHS guidelines under six planning scenarios: urban, rural, site-specific, landscape-scale, restoration, and mit-

Table 2
Respondents’ ranking of applicability of PHS guidelines to long-range and project-level planning scenarios

Type of activity	Always or usually valuable (%)	Somewhat or rarely valuable (%)	Do not participate (%)
Long-range activities			
Zoning	37	39	22
Shorelines	53	22	23
Critical areas	68	17	14
Comprehensive planning	48	31	20
Project-level activities			
Residential	50	33	17
Industrial/commercial	49	34	16
Transportation/utility	46	30	23
Stormwater	41	30	27
Mitigation/restoration	58	28	13
Critical areas	66	19	14
State Environment Policy Act	65	26	8
Forest practice	32	13	54
Agriculture	18	25	57
Shorelines	52	25	23

igation projects. Respondents ranked their use of PHS in each scenario as frequent, sometimes, infrequent, no opinion, or other.

2.4. Factors influencing use of PHS guidelines

We predicted that two factors (job responsibility and perception that PHS was useful for projects of a particular size/scale) would influence the use of PHS by planners. We used a 2×2 chi-square test of independence to determine if regular use of PHS was independent ($P < 0.05$) of a respondent's job responsibility, and a 2×2 chi-square test of independence ($P < 0.05$) to determine if regular use of PHS was independent of the percentage of respondents who viewed the guidelines as frequently fitting the scale of their planning projects.

2.5. Potential improvements to PHS

We asked respondents to answer an open-ended question, "Briefly explain what WDFW needs to do to make the PHS guidelines more useful for local planning." We identified the key words that best summarized each response. These key words were grouped into more general themes that could be addressed by WDFW.

3. Results

3.1. Respondents' characteristics

Twenty-six percent of the 1200 potential respondents ($N = 314$) completed and returned the surveys. Fifty percent of the respondents worked for city governments, 17% for county governments, 2% for regional governments, and 17% were private consultants. Respondents listed their primary job responsibilities as: current planning (40%), long-range planning (31%), project planning (23%), environmental planning (22%), and supervisor/planning director (21%) (respondents could select more than one category). Eighty-three percent of the respondents said they were involved in planning activities in western Washington, an area containing the state's major urban centers. We contacted the APA, the largest professional planning organization in Washington, to see if the demographic composition of our respondents were representative of Washington's planning community. We found that

the ratio of eastern to western Washington planners in our sample was nearly identical to the organization's membership (A. Estep, personal communication). The APA did not keep track of any other demographic information.

3.2. Knowledge and use of PHS

Thirty-four percent of the respondents ($N = 107$) said they had a working knowledge of the PHS guidelines. Twenty-nine percent ($N = 31$) of those respondents said they frequently used PHS. The remainder responded that: there were no triggers in their jurisdiction's planning guidelines that would require use of PHS (17%); there was not enough time to research the management recommendations (13%); the PHS guidelines rarely answered specific questions (7%); there were no PHS guidelines for species or habitats associated with their project (5%).

Respondents rated how well PHS answered fish and wildlife conservation questions associated with long-range and project level planning activities (Table 2). We pooled their responses into two categories for each activity: valuable (always or usually valuable) and not valuable (sometimes or rarely valuable). The majority of respondents found the PHS guidelines valuable for two long-range planning activities (shorelines, critical areas) and five-project level planning activities (mitigation/restoration, state environmental policy act, critical areas, shorelines, residential).

3.3. Ability of PHS to address planners' needs

Respondents stated that PHS was easy to understand. Most respondents said that PHS was frequently or sometimes useful in all scenarios except urban projects. The guidelines were least useful for urban and site-scale projects (Table 3).

3.4. Factors influencing use of PHS guidelines

We found that using PHS on a regular basis was not independent ($\chi^2 = 7.868$, $P = 0.005$, d.f. = 1) of using PHS for current or project planning. Those working in current/project planning, who represented the majority of respondents, were less likely to regularly use PHS than expected (Table 4). We found that using PHS on a regular basis was independent ($\chi^2 = 2.926$, $P = 0.09$,

Table 3
Evaluation of ease and frequency of PHS use

Factor	Frequently	Sometimes	Infrequently
Easy to understand	48	37	6
Corresponds to scale of projects	22	47	18
Provides quantitative information	25	43	21
Answers questions in urban environments	1	39	42
Answers questions in rural environments	27	28	6
Answers questions at a site-scale	11	42	26
Answers questions at a landscape-scale	27	30	15
Answers questions about habitat restoration	15	37	18
Answers questions about habitat mitigation	15	45	19

d.f. = 1) of a perception that PHS frequently fit the scale of projects.

3.5. Improvements to PHS guidelines

Key words taken from respondents' suggestions on how to improve PHS were grouped into 12 themes (Table 5). The most frequently provided responses were linked to three themes (urban, assistance, and scale). Respondents recommended we improve the guidelines for application in urban areas, said they needed more assistance and training from WDFW on how to use PHS, and stated that PHS need to be developed for site-scale planning projects.

4. Discussion

4.1. Role of work setting and planning responsibilities

We asked how work setting and job responsibility influence use and perception of PHS. The majority of

Table 4
Influence of respondent characteristics on regular use of PHS guidelines

Respondent characteristic	Regular use (%)	Rarely used (%)
Primary job in current/project planning ($N=98$) ^a		
Yes	24	76
No	45	55
Believe PHS guidelines frequently fit scale of planning projects ($N=104$)		
Yes	70	30
No	49	51

^a χ^2 -test of independence ($P < 0.05$).

respondents worked for city governments in the more densely populated area of the state. These planners used PHS guidelines for both short and long-range planning but noted the lack of guidelines for species and habitats found in urban areas. This need is not a unique concern for planners in Washington or the United States. Harrison and Davies (2002) discussed the importance of incorporating uniquely urban habitats into conservation planning in their review of planning efforts for brownfield habitats in London. Potential models for urban-based conservation planning guidelines exist in materials developed for the London Biodiversity Audit (London Biodiversity Partnership, 2002).

Goode (1989) notes that the planning approach used in cities in the United Kingdom places less emphasis on rare species and habitats and more on conservation work benefiting people. Because some rare species addressed by PHS have needs that are entirely incompatible with urban areas (e.g., northern spotted owl), some PHS publication will not realistically be able to address urban issues.

The majority of our respondents were involved with current or site-scale rather than long-range planning. These respondents said PHS guidelines were better suited for landscape-scale projects and could be improved by adding more information to plan for species and habitats at smaller scales. This focus on site rather than landscape-scale planning indicates a difference in the perspective of planners and conservation professionals that is not unique to Washington or the U.S. Specifically, resource agencies, including WDFW, view local planning efforts as a tool that should be implemented at holistic or landscape-scales that often require permeable boundaries. Local authorities, however, have historically planned for wildlife using

Table 5
Themes and associated key words for response to question, “What can WDFW do to make the PHS guidelines more useful?”^a

Theme	Key words	Theme	Key words
Urban	Urban areas (9) Urban (14) Small cities	Buffers	Extreme buffers Buffer Reduce buffer Buffer width
Assistance	Training (6) Education (2) Workshops (2) More staff assistance Few staff Support local government Presentations Communication Outreach	Maps	Mapping Detailed mapping Circulate with maps
		Publicize	Easy to find Publicize PHS Better distribution
		Update	Updates (2) Timing
Simplify	Simplify (2) Brief description Distill information Make easier Explain better Summaries Succinct Booklet Consolidate Difficult Glossary Integrate	Accuracy	Inaccurate Avoid bias Consistency Hard science
		Planning	Conservation planning Pre-existing development Land-use
		Habitat	More habitat Riparian weak
Scale	Site-specific (3) Local planning (2) Project-level Small projects Small scale Specific information Local Multiple scales Regional guidelines	Other	Performance standards Degrade Public Forestry/logging Multiple species Impact Interim Best management practices Not practical
Regulatory	Zoning Adopt PHS Incorporate in ordinance Triggers in code Incorporate in hydraulics code No words like “should”		

^a Number in parentheses relates to the number of responses with corresponding key words.

discrete areas with legally mapped borders (Boothby, 2004).

Two approaches from outside North America are potential solutions to this difference in planning perspective. Lunney et al. (2000) describes a conservation

plan for koala (*Phascolarctos cinereus*) habitat based on detailed studies of this species' use of habitat in a region. This approach allowed development of habitat plans that addressed planners' site-scale needs as well as a landscape-level approach to koala conserva-

tion. Löfvenhaft et al. (2004) described the process of identifying small habitats in urban areas that are important for conservation of rare species, and outlined a model of how these habitats and species respond to different planning scenarios. Both approaches involve a closer working relationship between planners and conservation professionals than what previously existed for PHS.

4.2. Factors limiting use of PHS

Respondents indicated they would like to see WDFW's staff offer more personal assistance. Specifically, they requested workshops and support from local staff on how to more effectively implement PHS in their day-to-day work. This issue was similarly expressed in a comparable survey of 100 local planning authorities in Great Britain (Vincent and Marshall, 1991). Because WDFW recently experienced severe budget cuts, this might be difficult. When opportunities arise, however, WDFW should provide more technical support so PHS can be used more regularly by local jurisdictions. Discussions about PHS at planners' meetings would familiarize more individuals with this scientific resource and increase the future use of PHS guidelines. In addition, the distribution of newsletters (especially electronic distribution via email) could also be an effective way to keep planners up-to-date on relevant scientific findings and innovative ways PHS has been used to improve conservation planning.

5. Conclusions: developing effective guidelines for conservation planning

During the past 10 years, federal and state wildlife authorities' role in the protection of species and habitat in the United States has declined and many land-use decisions are made locally (Duerksen et al., 1997). Internationally, local planning authorities are also often in charge of making land-use decisions that affect wildlife (see Office of the Deputy Prime Minister, 2000), while larger agencies play more of an advisory role.

Our survey of planners in Washington indicates that planners view PHS guidelines in a context that is very different from that of WDFW biologists. This context is based on a need to incorporate guidelines into a local planning framework that may or may not place an

emphasis on conserving rare species. The Washington Department of Fish and Wildlife has already begun to modify and expand upon PHS to address many of the needs identified by local planners in Washington. The agency is beginning to develop publications that can more easily be applied to smaller projects (e.g., residential subdivisions) and WDFW recently published a newsletter specifically for planners. The agency has also begun looking into the development of a publication that would specifically address conservation and planning issues common to the urban environment. During the process of developing the "next evolution" of PHS, WDFW plans to consult with planners to ensure the agency is creating products that will frequently be used. Because local jurisdictions are often the final decision-makers for activities that ultimately impact critical habitat, it is important that other agencies conduct similar efforts to ensure that more jurisdictions can easily obtain scientific information that is relevant to their needs in order to help them make sound management decisions.

The key recommendation from our study is the need for a participatory approach to planning that incorporates both species and habitat conservation and the practical needs of planners. Such a participatory approach to planning will lead to the development of guidelines that will be of greater value to the planning community, which in turn will benefit shared conservation goals.

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