THE HARVARD

ENVIRONMENTAL REGIONALISM PROJECT

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THE HARVARD ENVIRONMENTAL REGIONALISM PROJECT

Charles H. W. Foster and William B. Meyer

In the spring of 1998, prompted by the apparent resurgence of interest in regionalism throughout the United States, the authors initiated an inquiry into the use of regions to advance environmental protection, use, and management. The senior author, Charles H.W. Foster, had spent more than forty years in environmental practice, much of it at state and regional levels, and was currently involved in teaching and research at Harvard University's John F. Kennedy School of Government on what makes regions succeed or fail. His colleague, William B. Meyer, a research geographer trained at Clark University, had long been interested in the era of environmental studies as the field moved away from environmental determinism.

The authors decided that one of the study's first components would be a survey of expert opinion to see what guidance scholars and practitioners could provide in the way of concepts, reflections, and cautionary and encouraging experiences. An earlier effort provided a potential model for this inquiry, for in 1934-35 the New Deal's National Resources Board/Committee (NRPB), investigating the potential use of regions for social and economic development, had canvassed the views of twelve prominent regionalists regarding issues of theory and practice (see *New Deal Regionalism: A Critical Review,* Kennedy School Working Paper E-2000-02).

The present authors examined the NRPB's resultant report *(Regional Factors in National Planning and Development,* December 1935) and the circumstances under which the study was conducted. They tried to emulate its strong points and to avoid certain mistakes that may, in the end, have greatly limited the report's impact and influence. In doing so, every effort was made to retain the earlier structure of questions and the nature of the inquiry process in order that the responses six decades apart could be compared and contrasted. Nevertheless, certain departures were inevitable.

First, the list of possible respondents was much enlarged. Rather than simply a dozen individuals well-known to the investigators, a combination of literature review and peer nomination was used to identify some 150 regionalists as prospective respondents. The names were drawn from both the United States and Canada, including one individual currently resident in Europe. In selecting the pool of respondents, a range of ages, sexes, ethnic backgrounds, disciplines, forms of practice, and geographic locations was sought.

Second, the earlier NRPB questions were redrafted to reflect the current interest in environment. However, with the exception of the environmental modifier added, every effort was made to retain the original phrasing of the questions asked. Much like the

earlier inquiry, the intent was to have respondents address matters of regional definition and delineation first and, only then, consider the uses of regions and the means of facilitating such approaches.

Questionnaires (see Appendix B) were sent out on May 15, 1999 with responses requested by July 1. A reminder mailing was dispatched on July 15. All responses received by September 15 were deemed candidates for analysis. A progress report was sent to respondents on December 15.

Approximately one-third (48) of the 150 potential respondents proved willing to reply. The answers received varied greatly, in length, format, and content. Some covered less than a page, others more than a dozen pages. A number of the respondents sent essays addressing the overall issue raised rather than answering each question separately, or mingled their responses to two or more of the questions. Others sent previously published essays or papers- Several of the answers addressed directly only some of the questions posed. Two respondents keyed their answers to the questions posed in the 1935 not the 1999 survey, although their views on current environmental regionalism could be readily inferred from the answers they gave.

The authors engaged their fall term graduate student class on environmental regionalism in the initial review of the responses, having students address the questions one by one. At the midpoint of the course, two colloquia were convened: the first, a working conference of grassroots principals involved in the development of the North Quabbin (MA)/Monadnock (NH) interstate environmental region; the second, a gathering of practitioners and scholars from the United States and Canada, including four of the most thoughtful of the questionnaire respondents (see *Colloquium on Environmental Regionalism,* Kennedy School Working Paper E-2000-09). At the conclusion of the course, every student was then required to answer the four questions as if he/she was an actual respondent. In that regard, the response received from Dr. Richard L. Doege - that environmental regions be evaluated, too, for their potential as effective operating organizations (analogous to business firms) - was especially noteworthy. Input from all of these sources enriched the authors' analysis of the questionnaire responses appreciably.

In the pages to follow, the authors have excerpted significant or representative points made by the respondents and have, in many cases, clustered those that are similar. The attributions are keyed to the list of respondents and their affiliations contained in Appendix C. While the respondents, by replying, have indicated their willingness to have their views included in the survey and analysis, any individual questions and/or citations of the responses should be cleared with the respondent directly. The clustering and interpretation of the responses are the sole responsibility of the Harvard investigators.

THE RESPONSES

Question 1: *What do you conceive an environmental region to be, and upon what basis would you delineate such a region?*

"The phrase 'environmental region' is not one that we often see," one respondent advised (36). "As a relatively new term, it has not yet acquired a standard meaning or set of meanings."

Nevertheless, through this question, we sought clarification of what environmental regionalism meant to the respondents and to the people they have worked with.

Several of the respondents began by cataloguing possible types of environmental regions. Three, for example, drew a distinction between political management entities and environmentally defined units (29, 33, 36). Two (1, 40) cited the conventional triad of hydrologic, biotic/ecological, and physiographic regions. Another (30; also 7) added metropolitan regions to the list of possibilities, while still another identified a total of eight classes of regions (15). The catalogue of specific examples cited ran the gamut from counties designated as disaster areas, to 100-year flood plains, to endangered species habitat areas.

More than a few of our regionalists saw so wide a range of possible types as to defy cataloguing. They asserted that the proper form and delineation of an environmental region are always specific to the problem being addressed and vary enormously from one problem to another. The term "problem-shed", used to capture this kind of a regional unit coextensive with the particular issue at hand, was coined by one respondent (44; also 22 to similar effect). The term "environmental region," some maintained, is "almost infinitely elastic" (45), for such regions "come in as many shapes and sizes as the human purposes that require such frameworks" (18). They are "delimited by criteria set by the particular environmental characteristics that are to be studied and managed" rather than by any more general considerations (47). "There is not a single, empirically determined 'environmental region'...and any attempt to find one is, in my judgment, misplaced" (27; also 12, 24, 39, and with qualifications 19 and 22).

Even many of the others noted the need for flexibility and variety in regional arrangements, and the tendency of different environmental processes and problems to occur within different "problem-sheds" (44; also 34 and 43). They nonetheless found it possible to propose a particular kind of unit as paradigmatic of the environmental region if all else is equal and to expand the use of such regions beyond that of a narrow response to a single problem. What that unit should be, however, was a matter of much further

disagreement. Each of the most frequently proposed types - watersheds, ecosystems, and bioregions - had its advocates and its critics, but so did several other options.

The watershed (or river basin), as several respondents noted, is the classic form of environmental region in past North American theory and practice. It has kept the allegiance of a number of the practitioners and theorists we surveyed (1, 6, 42, 43, 44; also, with reservations, 3, 25, 40). On the other hand, equating watersheds with environmental regions was flatly rejected by a number of respondents who saw the watershed as too restrictive a framework and even as an idea whose time may have come and gone (9, 16, 18, 34, 37).

Many respondents proposed to define environmental regions ecologically rather than hydrologically. To them, regions represented the co-occurrence and close, causal interrelationship of a number of different biophysical phenomena - what one respondent called "real units of nature" (8) - within a given area and in combinations that set the region apart from other areas (2, 3, 7, 8, 19, 23, 32, 34, 41, 48; and, with reservations, 24, 25, 39, 42). These ecoregions may be defined "theoretically" by *a priori* criteria, or "empirically" by the examination and grouping of places into regions according to their similarities and proximities (46). Most of the definitions of ecological regions did not account for human variables, or included them only as forces needing to be regulated in order to prevent disruptions of the ideal ecological patterns (48).

Two respondents explicitly defined environmental regions as "bioregions" (4, 29). In practice, this term has generally been used to imply more attention to the role of human activities in forming regions. Such seemed to be the intention here as well. However, one critic suggested that an approach of this sort is often a distinction without a real difference in that what is regarded as human activity is often derived from the qualities of the surrounding environment and is, therefore, not treated as an independent factor (1). That view seemed to underlie at least one of the avowedly bioregionalist responses (4), as well as three others who did not actually claim the label (26, 32, 40; also, with many reservations, 8).

For purposes of regional definition, other respondents gave human factors fully equal standing with those of the environment. They characterized regions by the spatial interaction of biophysical phenomena with the human activities of land and resource use (13, 16, 28; and, by implication, 1, 21, and 27). Another respondent saw human factors as crucial in a different way - through "regions of the mind" defined by public attachment to and identification with salient environmental features (20; also 27, 28, 36). One of the bioregional respondents underscored the idea by reminding us that the term *environmental* is actually composed of two parts: "environ" and "mental" (29).

Still others recognized environmental regions according to human variables alone. The improbability of political boundaries being redrawn along environmental lines led one respondent to advocate using existing maps of jurisdictions as the basis for regions (37). Another (35; also 10, 18, 27) found "citistates" - major cities plus their suburbs and related hinterlands - to be as sensible a division for environmental as for other purposes.

To some of the respondents, the term "region" suggested a certain size, most often that of an intermediate level of spatial organization (16, 19). One warning against making regions too large and thereby difficult to identify with (22) was balanced by another that saw "large landscapes" on the order of the Columbia River basin as the best units for effective regional identification and organization (38).

The responses revealed a widespread acceptance of the notions of hierarchies and "nesting" as crucial to effective regionalism. These are concepts basic to watershed theory, although some espousing such approaches would use other criteria as well to aggregate watersheds (1, 43). But they were also emphasized as integral to ecoregions (16, 19, 23, 25, 33) and bioregions (4, 29). Hierarchies, however, did not seem to play much of a role in such configurations as metropolitan regions or "regions of the mind."

One of the classic advantages of watersheds, alluded to in some of the responses, is that they provide clear and sharp boundaries between units. Ecological and metropolitan regions, by way of contrast, were not seen as having the same firmness of outline, although one respondent did hold that ecosystems represent discrete spatial units (23). Another, however, questioned whether even watersheds can be thought of in this way, so extensively and profoundly altered have they been by human management (21). This respondent was not convinced of the usefulness of regionalism as a matter of "defining and managing fixed spaces" with "sharp, fixed boundaries" akin to the neatly fitted pieces of a jigsaw puzzle. Others were equally skeptical about physically-defined regions ever being able to capture the ways both natural and human systems operate (8, 19).

Question 2: *To what extent should environmental attributes (vis-à-vis social, economic, or political characteristics) determine the size of regions, the nature of their boundaries, and their relation to existing jurisdictions?*

This question raised in more explicit form an important dimension of Question 1. Because environmental and human boundaries rarely match, choices must be made in order to blend these factors into a region capable of managing environment-human interactions. The question encouraged respondents to think through and defend their views on this subject.

As with Question 1, some maintained that no general answer could be given because all depends upon the particular problems and goals at hand (45, 47). Among other respondents, the chief division was between advocates of regions defined entirely in terms of biophysical features and those opposed to any automatic exclusion of social variables.

The most outspoken representative of the former position warned against "the insistent, social-science based notion that in delineating 'environmental regions' the varying distributions of ecological, economic, social, or political characteristics that have arisen across the landscape must somehow be combined" (23). Two others, writing to similar effect, stated that biophysical criteria should be accorded "overwhelming importance" in demarcating regions (4) and that "environmental attributes do determine boundaries", the only question being "whether such boundaries are recognized" (40; also 2, 26, 32, 34, 42). As with Question 1, some proponents of bioregions treated human variables as essentially reducible to biophysical ones (e.g., "these [social] commonalities are the result of their common biotic and abiotic conditions" (26).

On the other hand, several respondents objected very strongly to the idea of defining regions without reference to social variables as significant factors in their own right. "Human activities tie a region together, not ecological variables alone," one wrote (16). Another saw "a tendency in some quarters to identify an environmental region with biological or ecological factors alone" as "a self-defeating strategy that will assure the marginalization of environmental concerns". Such an approach is "counter-productive," and it would be "foolish" to ignore human variables in defining environmental regions (1; also 13, 20, 21, 28). In between lay many shades and nuances as to how much weight respondents would give to each class of factors, in what ways, and with what willingness.

At first glance, the divide seemed to be deep and fundamental. All the same, we suspect that the two extreme positions taken in the responses are not so irreconcilable as they first appear. As soon as one asks what is the purpose for defining a region, it turns out that, to a great degree, different means are being proposed for different purposes. For example, the strongest advocates of a purely biophysical definition have units of monitoring and assessment in mind. Those most opposed to such a definition are thinking instead in terms of entities for environmental management. These positions do not necessarily conflict. Neither group seems averse to the idea of using other kinds of regions for other environmental purposes. Only the occasional bioregionalist insistence that regions, for both analysis and governance, be defined in the first instance by environmental characteristics, remains difficult to reconcile with other positions.

Otherwise, the answers support and illustrate the thesis that different human purposes may indeed require different regional forms.

Question 3: *What, in your opinion, is the best type of region for environmental protection, use, or management?*

This question, too, brought out more fully some of the issues raised by Question 1. It asked the respondents to endorse - or refuse to endorse - a particular one of the range of possible environmental regions that they listed earlier. The responses displayed the same major divisions: between those who do and do not see environmental regions as entirely problem-specific rather than taking more general forms; and among the advocates of many different kinds of regions.

Skepticism of the deepest sort was expressed by those who think that regions hold little promise as tools of environmental policy. Competition among established jurisdictions so dominates over cooperation at present, one respondent argued, that regions are all but impossible to set up (18; also 12, 17, 37). As before, many of the respondents doubted that a single best general type of environmental region could or should be identified (9, 12, 15, 17, 18, 37, 47; with qualifications, 8, 13, 22, 24, 39, 44, 45) unless the type of "problem-shed" (44) or the "purpose-built" (21) region be accepted as such.

The advantages of watersheds, though, were acknowledged by even one of the most consistent skeptics in the survey: "It's hard to escape the watershed or river basin ... The logic is there in many ways..." (45). Other respondents suggested that watersheds are "the most consistently useful unit" (1); that they are "often the easiest for people to relate to"; and that they are overall "the best unit for defining environmental functions" inasmuch as other environmental and even social features, such as transportation corridors, often will be found to follow water courses (43; also 6, 25, 33, 42, 44). As frameworks for action, watersheds are "stable, visualizable, and important" (8). Several proponents of bioregions favored using watersheds as the primary bioregional criterion (4, 29, 40).

Many of their proponents from Question 1 retained ecoregions as the most comprehensive and inclusive frameworks for treating the major dimensions of the environment. Bioregions likewise retained their advocates, including those who do and do not actually use the term (4, 26, 29, 32, 40). Mountain ranges (3) and major plant communities (26) were suggested as organizing elements by other respondents. It is worth noting that watersheds or other hydrologically-determined regions were not promoted by all of the respondents with backgrounds in water resources. Indeed, they

were strongly criticized by some (9, 37). Further, watershed approaches found some of their strongest defenders in representatives of the social sciences (6) and the humanities (42). Nor were ecoregions the sole preserve or the unanimous preference of ecologists.

As with Question 1, hybrid regions defined by a combination of natural and human. factors had their advocates. Some proponents of watersheds noted that the ways in which they are aggregated into larger units may need to be modified by other political and social factors (1, 43). The rationale for regions shaped in the form of cities and their hinterlands was stated most cogently by two respondents: "Environmental problems in the US are for the most part the problems generated within urban regions [and belts of such regions]" (18); "Arguably ... the most important environmental issues we face arise in the context of metropolitan regional growth and development" (27; also 10, 22, 35). If these human driving forces of change are now paramount in the nature-society relationship, the argument goes, it is their spatial pattern that should dictate any regional organization for environmental management. Unification would permit more efficient management, the advocates of consolidated metropolitan governance asserted. On the other hand, even some of these respondents warned that such a framework may invite abuses of power if they become dominated by influential, local interest groups (27, 35).

Other respondents favored employing the existing system of political units (12, 37) and the regions of public attachment and identification discussed under Question 1 (20, 28, 36).

Question 4: What administrative, policy, or legislative means (if any) would you advocate to encourage the establishment and use of environmental regions?

This question produced the widest and least orderly set of responses of any in the survey. Several participants, as before, saw the proper means as so dependent on the particular case that they were unwilling to make any specific recommendations of a general nature (18, 45, 47). Several more were not inclined to encourage the establishment and use of environmental regions at all. They saw them, for various reasons, as inefficient tools under present conditions and thought that their objectives would be better sought through other means (2, 12, 17).

A number of the respondents believed that the redrawing of local and perhaps state/provincial boundaries on an environmental basis would be necessary for effective regional policy (13, 32, 43 and, with qualifications, 1). They acknowledged, however, that the political difficulties of doing so are enormous. The problem of which environmental boundaries to follow, moreover, would still need to be addressed. Most of

the respondents accepted the basic inherited political framework as given and unlikely to be altered. The creation of new agencies or bodies of government superimposed on existing jurisdictions was suggested as a way to deal with cross-boundary problems, but only as one component of a larger strategy (22, 23, 26, 28, 36, 43, 44).

Much preferred among those who favored governmental action were initiatives allowing, encouraging, and perhaps funding cooperation among existing units, thereby building flexibly upon past experience (especially 21, 27; also 3, 6, 28, 40). Some respondents favored more use of the existing federal-state machinery of the interstate compact (15, 23, 37). Others observed that the two-tier structure of the American federal system offers many opportunities that are not available in the more centralized polities of other countries (notably 15, 21, 27), though another argued that in the United States, unlike Canada, the centralization of environmental policy at the national level has tended to "flatten" regional initiative (5).

At the federal level, it was suggested that agency activities might be reorganized according to the boundaries of bioregional units (13). Environment might also be added to the agendas of existing or emerging federal or federal-state regional organizations established for other purposes (14, 22, 31, 35). The belief that useful regions will emerge chiefly from state/provincial initiatives - perhaps taking the form of reorganized local governments (1) or special districts on the model of water districts (3) - was countered by testimony as to the problems of undertaking activities across state lines (3). But much less in evidence was the view that federal leadership of one sort or another will be necessary, even if it occurs without excessively heavy-handed control or direction (especially 17, 27, 42, 44). Nevertheless, many argued that executive or legislative mandates aimed at coordinating the policies of federal agencies could be one useful way to stimulate the formation of environmental regions (8, 13, 23, 24).

The advocates of metropolitan initiatives (10, 25; also 6) placed less emphasis on governmental action alone than on alliances of government, for-profit, and non-profit actors. Not a few respondents put their hopes chiefly in non-governmental organizations. They saw formal, legal arrangements, at most, as following and codifying what had been begun informally (20, 24, 25, 38), and perhaps to be avoided altogether. One respondent commented that he has yet to see governmental regional initiatives of any kind succeed (2); another viewed non-governmental organizations as much the likeliest locus of regional advances (38). Bioregionalists held that top-down, "bureaucratic regionalism" has nothing in common with "the real thing", which cannot be "mandated or legislated" (29; also 4). Locally-arising organizations, such as watershed councils, were the means suggested instead.

Many of those who placed little confidence in the government sector looked for progress chiefly through public education. Enhanced public consciousness of and identification with environmental regions were cited as crucial in quite a few otherwise conflicting responses (e.g. 1, 2, 4, 7, 20, 26, 27, 29, 33, 36) and may form the chief area of overlap and agreement in this otherwise contentious section of the survey.

CONCLUSIONS DRAWN FROM RESPONSES

What is an environmental region and how should it be delineated?

Environmental regions, usually though not invariably, have defining natural characteristics. These can be physiographic (e.g., prominent land forms such as islands, mountain ranges, plains, and deserts); hydrologic (e.g., coastal lowlands, river valleys, wetlands, and drainage basins); or biotic (e.g., forest and other vegetative types, home ranges of animals, and interlinked ecological systems). To qualify as a region, these elements should occur in repeated patterns and associations, over time as well as space, and with a high degree of continuity.

Regions are as much "mental" and they are "en-viro." As our respondents have reported, the best regions have a perceptual quality built around a strong human sense of place. Indeed, as many have asserted, no environmental region can succeed for very long without a credible public identity.

Regions tend to be less precise at the margins than they are at the center. Generally speaking, a region will have a recognizable core, but overlaps, blends, and indistinctions will increase steadily from the center to the margins. It is this imprecision that causes many to doubt the validity and utility of regions, but it is also the quality that gives them much of their flexibility and promise.

Many regions exhibit a kind of fractal quality - an ordered, seemingly chaotic form operating through components that are layered, "nested", and organized hierarchically. It is this characteristic that may explain why many different kinds of organizational forms and programs exist.

Environmental regions seem to work the best when they address real, politically-relevant issues. Organization by "problem-shed" is often the practical way to begin, tailored as it is to real places, real needs, and real constituencies. System-wide approaches can then develop from there.

Regions are not pre-existing realities; they are created, not discovered. They are primarily useful conceptual frameworks for analysis and practice. Thus, regions are best thought of as ways to organize processes and relationships in order to harness capabilities and integrate policies and programs.

To what extent should environmental attributes be controlling?

Respondents generally agree that biophysical factors alone should not be the sole determinant of environmental regions. However, such regions should be focused at least initially on environmental attributes and only then modified to reflect economic, social, political, and cultural factors. A system of overlays can be helpful in conducting the analysis, but the eventual boundaries of the region should grow naturally out of the inhabitants' perspectives, values, and the activities proposed to be facilitated. The essential quality sought should be *congruence*, and the primary means to achieve congruence should be through the creation of useful *aggregations*.

The larger the environmental region, the more it will be able to accommodate a range of interests, factors, and concerns. Yet, if it becomes too large, it will lose its significance to people and its popular base of support. Thus, the scope and scale of an environmental region are best determined pragmatically in relation to the activities and problems to be addressed. As others have asserted, form should simply follow function.

Since political/jurisdictional and environmental factors rarely coincide, existing patterns of governance and activity will have to govern boundary choices. And since separate sovereignties remain a fact of life in our Federal system, the majority of our respondents do not favor trying to replace conventional jurisdictions with environmental regions.

Ultimately, it should be remembered that environmental regions - like the environment itself - will turn out to be dynamic, not static. Conditions can be expected to evolve and change constantly. For that reason, informal and even ad hoc regions may be preferable to legally-constituted entities. However, that does not preclude a role for government in environmental regionalism. It only defines the manner in which that involvement should occur.

What is the best type of region for environmental purposes?

Watersheds remain a popular biophysical candidate for regional designation, in part because rivers are powerful symbols and points of connection, and also because they are readily amenable to design strategies and cause-and-effect monitoring. Yet the

advocacy of watersheds in our survey was conditioned in several important respects. For example, respondents favored watershed approaches on a relatively small scale as contrasted with the historic and largely unsuccessful river basin programs of yesteryear. It was suggested that watersheds serve as base units and building blocks only, not exclusive territories for regional action. Watersheds were given high marks as regions for performance-based planning, particularly where needs extend across state lines, but respondents felt that implementation should occur, where possible, through component jurisdictions.

Ecoregions were another form of environmental regionalism advocated by many respondents. Since topographic conditions are not always amenable to watershed definition, the use of ecosystems may end up fitting more situations. But a number of caveats accompanied these recommendations. For example, ecoregions should include both abiotic and living resources. A sound database, both natural and human, should be available. The need to make ecoregions relevant to political decision-making suggests the wisdom of starting with an ecosystem basis and then modifying the boundaries to reflect other concerns. Like watersheds, ecoregions should employ hierarchies to obtain optimum conditions of scale.

Other forms of biophysically-determined regions nominated were those marked by major plant communities, soil types, climatic zones, and landscapes. The last carries the added virtue of a region where natural features are tied closely to human activities.

Still other respondents favored regional determinants that went beyond natural features. "Metro" regions, for example, display both human and environmental characteristics. They usually have well-developed databases. Given the fact that urban regions are the sites of many of the nation's most serious environmental problems, and are rich sources of political and public support, they should not be overlooked as prospective regions for environmental purposes. Taking a "citistate" approach could remedy the shortage of areas with formally-organized metropolitan governance.

Purpose-built regions were favored by many. For example, the more the region is *problem-driven*, the more closely it could be scaled to correspond. It also could be *objective-driven (e.g.,* pollution abatement, reduced sprawl, increased sustainability and livability). A third variant might be regions that are *process-driven* - those that would

utilize special authorities (like the ESA or NEPA), or group-owned tools such as common property regimes.

Those designing environmental regions should also be responsive to forms of regional consciousness, several respondents urged. Such regions would be formed to reflect human values and perceptions. They might emerge out of a set of specific issues and commonality of objectives, or out of images and metaphors especially meaningful to the region's inhabitants. "Soft-edged" rather than "hard" (facility-type) planning would be required here to make such regions work.

The pragmatists among the respondents concluded that no single best type of region can be determined. In fact, devices to interlink traditional, politically-determined jurisdictions may be preferable to creating wholly-new regional bodies. The regions should not be viewed as interlocking jigsaw puzzle pieces. For the country as a whole, a system of complex, occasionally interrelating regions is likely to be necessary, but a uniform array of regions does not seem to be politically feasible. Yet each region created must fully reflect cultural and biological diversity and represent the needs of both the present and the future occupants of the area in question. As one respondent observed, to be successful, regions should be prominent, strategic, equitable, institutionalized to some degree and, ultimately, empowering to those who bring them into being.

What means would you advocate to encourage environmental regionalism?

In general, respondents advised seeking out large, definable, organic landscapes, preferably those with a coincidence of natural and cultural features, where sufficient regional consciousness exists to make the area identifiable (and even nameable). Pluralistic and deliberative processes should be used to establish the region. Representative councils should be formed and invested with limited functions at first. As success is achieved, other areas and functions can be added. The overall objective should be to advance coordinated action, both public and private, on one or more environmental problems/issues. Interdisciplinary teams will prove helpful in developing facts and designing solutions. Regular state-of-the-environment reports are an excellent way to generate the public interest and support necessary for successful implementing actions.

Other possible approaches include employing the provisions of existing governmental authorities to establish the region. For example, virtually every federal program already permits the prosecution of objectives through regional approaches. Although not always explicitly authorized, federal environmental administrators usually have sufficient administrative discretion to undertake such actions on their own. If not directly initiating regional approaches, governmental agencies can provide significant assistance in facilitating regionalism through technical services, data, funding, legal, and enforcement actions. Even where the sponsoring entity is private in nature, the presence of one or more governmental partners can bring enhanced credibility to the program. Liberal use of memoranda of understanding, interagency and intergovernmental agreements, and public/private partnerships can help overcome the usual parochialism and compartmentalization encountered in regional practice.

Another possible route to environmental regionalism is the addition of environment to the agendas of existing regional organizations, such as agencies for planning, water and related land resources, electric power, economic development, transportation, and metropolitan services. The chief advantage here is ready access to the resources of an established organization. The risk is possible submergence of environmental concerns within its larger agenda.

In some instances, the most desirable route will be to seek specific authorization for the regional venture. The states may turn out to have greater flexibility than the federal government, particularly if the proposed region lies wholly within the jurisdiction of a single state. Multi-state ventures, or even federal-state initiatives, can be undertaken pursuant to the compact provisions of the US Constitution.

If the course to take is uncertain, a multi-organization study can be initiated through which major stakeholders can be canvassed and the best ideas generated, researched, and advanced. In some cases, the study agent becomes the implementer of the proposed program.

Regardless of the means chosen, respondents provided a thoughtful list of the principal elements to be incorporated in any regional program, and the approaches likely to make it successful. As examples, they leaned toward ad hoc governance arrangements at first to allow the participants to feel their way through the early stages of a regional

program. Once confidence-building has occurred, strategic and flexible alliances can be formed with key organizations in the region. After thoughtful planning, standard and performance measure setting, demonstration projects, and extensive deliberation, a package of accords should be arrived at establishing an agreed-upon agenda and set of objectives.

In terms of program activity, the regional entity will need the capacity to convene periodic regional summits, administer "tool boxes" of technical and financial assistance, and undertake negotiation and conflict resolution as necessary. It should establish itself as the premier source of environmental information in the region, carrying out education and communications programs built upon bottom-up, community-based functions. And it should use science and the media as its principal watchdogs to oversee regional achievement and progress.

Finally, as its principal expectation, the regional organization should commit itself to accomplishing *change* - not only favorable advances in the state of the environment, but the removal of impediments to the protection, management, and use of its environmental resources. In so doing, it should be braced for the reality that no form of regionalization it embraces will ever fully satisfy policy-makers and the general public.

1935 AND 2000: A COMPARATIVE ASSESSMENT

As we have noted in a previous paper *(New Deal Regionalism: A Critical Review*, Kennedy School Working Paper E-2000-02), conditions in 1935 were drastically different from those of today. The nation was gripped by depression; unemployment was rampant; and federally-centered leadership seemed the only way out. A concerned Congress, within limits, seemed willing to give the Franklin D. Roosevelt administration much of what it requested. Economic and social experimentation were being encouraged at every turn. Environment was largely couched in terms of natural resources, the essential raw materials that most believed would return the nation to another period of full employment and prosperity.

Contrast that context with the scenario of the present. The nation's 21st century economy is robust; unemployment is at its lowest level in recent history; and state and federal tax coffers are overflowing. The public looks to private not public initiative, with big national programs increasingly being displaced or modified in favor of bottom up, citizen-directed activities. Government is viewed today more as servant than savior.

The nation's environmental priorities have changed, too. The emphasis is now on protection, not development of resources. Ecosystem integrity, resource sustainability, and stewardship are the passwords to the new environmental millennium. The major dollars being made are not in facility and resource-based production, but in use and service functions. The astonishing ease of transportation and communications now makes it possible for people to live anywhere and know what is going on virtually instantly.

To the planners and scientists involved in the 1935 survey, regionalism was seen as a way of enabling people to express and advance collectively their place-based traditions, interests, and aspirations. The problem to the strategists then was how to modify a political and managerial system framed nationally to reflect the realities of how humans actually occupy the land. It was felt that a system of regions would not only complement the current structure of government but help recruit a wider leadership for civic affairs. When all was done, the New Deal planners declared, regional differentiation would turn out to be the true expression of American life and culture.

An interesting question is whether the 1935 idea of regional attachment is now moot. People live in several places today and can travel freely to others. The world of

video gives us virtual regions. Electronic communication brings information to the inquirer almost instantly. Increasingly, we have become citizens of the world not the region. But old habits seem to die hard. As our respondents have indicated, the attachment to place, and the commitment to making it better environmentally, have never been stronger. The modern attributes of economic prosperity, communications, and travel, if anything, may have heightened regional awareness and made it possible for people to be inhabitants of not one but many different places. In the face of what many find to be a growing prospect of placelessness in this electronic age, perhaps the idea of regional attachment has come full circle again.

With these thoughts in mind, let us turn to the four questions asked of the 1999 regionalists and see how the answers compare with those received from the 1935 regional scientists. Given the size of our response pool and the way it was formed, we cannot claim statistical significance for any patterns that we may have discovered. The exercise, nonetheless, has the value of assembling for inspection a comparable cross-section of contemporary expert opinion, as identified through peer and literature search, in this highly dynamic and somewhat disorganized field of environmental regionalism.

The two sets of respondents first examined the question of how a region might be delineated. The 1935 regional scientists described a region as one exhibiting *homogeneity* in one or more of its aspects. The 1999 respondents set forth *congruity* as the primary organizing criterion. Each group entertained a wide range of possible organizing elements, socio-economic and cultural as well as environmental. They both spoke supportively of the importance of respecting ecological principles.

However, in a major departure, many of the modem regionalists favored watersheds as the primary or even exclusive regional organizing element. By way of contrast, the 1935 experts concluded that the river basin was one of the poorest organizing units that might be selected. At the time, one must recall, there was very little concrete experience with watershed organization in the United States. The now-world renowned Tennessee Valley Authority had only just been authorized by Congress. The fact that so many regionalists today endorse the watershed approach suggests that the idea has survived the test of time rather well.

Question 2 asked whether factors other than environment should enter into the creation of an environmental region. Recognizing that the means of addressing

environmental problems are often more jurisdictional and political than substantive, the consensus was that such regions should be based, at least initially but not exclusively, on environmental grounds.

We were reminded that in a Federal system separate sovereignties are a way of life. To try to convert them to a common environmental framework simply will not work. However, to the extent possible, the environmental region should be bounded to include whole jurisdictions. In this respect, the earlier respondents were in complete agreement. For example, an enduring concept, first suggested by the 1935 regional scientists, is the role that states or groups of states may be able to play in advancing regional environmental initiatives.

As indicated earlier, opening the door to other kinds of regional approaches released a Pandora's Box of suggestions from the modern regionalists. Among the most useful were to adapt the environmental region to the dominant institutions (not the reverse); to size and shape the effort to respond to current and pragmatic needs; and, to the extent possible, to let the region grow naturally out of the inhabitants' own perspectives and values.

We were cautioned that regional programs need to be constructed to be dynamic, not static, because environmental factors (like the environment itself) change and evolve constantly. For that reason, some respondents felt that informal, ad hoc, regional organizations were preferable to those that might be legally-constituted.

Not so the 1935 regionalists who were experimenting actively with institutions like governmentally-created regional planning agencies. However, within the framework of the national program they were considering, the New Deal regionalists' concept of a region - an area unified by common economic and social purposes, large enough to permit a reasonable adjustment of necessary activities to subareas, and small enough to develop a consciousness of community aims - does not seem distant from the modern environmentalists' sense of mission.

Turning to Question 3, the best type of region for environmental protection, use, and management, the most distinguished of the 1935 survey respondents thought it futile to try to discern or define a particular best kind of region. They preferred a flexible adaptation of form to function. So, too, did the bulk of the modem respondents, arguing against further searches for the chimera of the one and true type of region; All of the

arguments advanced in favor of particular kinds of regions, without establishing any as universally appropriate, had particular merits that prospective regional organizers would be well-advised to consider. But there seemed to be concerted opposition to choosing a single form to espouse everywhere.

A saving grace of the regional delineation dilemma is the fact that different types of regions need not be mutually exclusive. Watersheds, for example, can also serve as "regions of the mind" and "problem-sheds." Environmental concerns can be included within organizations addressing other issues (such as metropolitan regions). Where basic interests conflict, choices may have to be made. But worth keeping in mind is the pragmatic advice we received that regional action taken through or with established organizations will probably be more successful in the long run than the creation of wholly-new regional bodies.

The final question sought advice on what administrative, policy, or legislative means might best advance environmental regionalism. The prevailing counsel of flexibility was as evident here as in the other questionnaire answers. Various means and methods were set forth by the respondents, but the experiences that were offered do not testify to the likely success of any one grand design or program for environmental regionalism. They point rather to a more modest enterprise of assembling an array of tools and applying, and if need be, adapting them where they are likely to make a difference for the better.

Looking back over time, it was interesting to find the New Deal specialists describing nine physical characteristics of a model region for planning purposes and prescribing five possible delineations to actually bring a region into being (see Appendix A). Their suggestions seem as valid today for environmental purposes as they were nearly seven decades ago for social and economic development. Yet, the failure of all attempts to convert the dominant federal agency structure into a system of uniform regions should serve as a useful lesson for modem environmental regionalists. Standardized approaches are simply not going to work, especially those imposed by centralized governmental agencies.

In a quaint but instructive analogy, the 1935 report author, George T. Renner, warned of a federal "elephant", with a misguided maternal instinct, sitting on eggs and hoping to hatch chickens. "By attempting too much, even with the best of intentions, it

may destroy." On the other hand, as southern regionalist Howard W. Odum was reported to have observed in 1934, it will not be possible to plan for the next period of American development without a vivid sense of the country's great regional differences.

With the benefit of hindsight, it would seem that environmental regionalism is a movement that shows promise of progressing rapidly and steadily in the years ahead, but only if there is thoughtful attention and direction. Our final working paper will suggest a number of action items and objectives aimed both at advancing environmental regionalism and removing impediments to its successful prosecution.

Charles H. W. Foster, a former Massachusetts commissioner of natural resources, secretary of environmental affairs, and dean of the Yale University School of Forestry and Environmental Studies, is an adjunct research associate and lecturer in Harvard University's John F. Kennedy School of Government

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Appendix A

PHYSICAL CHARACTERISTICS OF A PLANNING REGION

(a) Its territory should be as contiguous and compact in outline as possible, rather than fragmented;

(b) It should possess the maximum degree of homogeneity, i.e. it should exhibit marked homogeneity of elements and characteristics in its central core, which homogeneity becomes progressively diluted toward the periphery. The boundaries themselves are in most instances transition zones rather than sharp lines.

(c) It should possess unity, organic interrelationship, and cohesion, i.e., it should have unity in environmental characteristics, to such an extent that it is or tends to be overlaid by a dominant type of cultural pattern embodying the works of man;

(d) It should include all territory containing a major combination of resources, i.e., it should be an economic-natural unit in general terms;

(e) It should include whole problem areas and not partial areas;

(f) It should include as nearly as possible a total aerial pattern of culture and works and should not cut across such patterns;

(g) It should be so delineated as to conform to existing regional consciousness and sentiments;

(h) It should possess regional identity, i.e. such uniqueness that a real consciousness will be wellnigh impelling;

(i) It should be of fairly large size, i.e., the largest area within which there is marked unity in physical and cultural elements.

METHODS FOR THE DELINEATION OF PLANNING REGIONS

(a) Regions based upon metropolitan spheres of influence;
(b) Regions based upon administrational and locational convenience;
(c) Regions based upon group-of-States arrangements;
(d) Regions based upon single-function areas;
(e) Regions based upon composite planning problems.

Source: National Resources Committee. December 1935. Regional factors in national planning and development. Washington, DC. P.157.

Appendix B

QUESTIONNAIRE

May 15, 1999

Memorandum: Environmental Regionalism in the 21st Century
From: Charles H.W. Foster

As one who has been involved in transboundary natural resources and environmental affairs for more than four decades (see attached resume), I am about to undertake a special research project on environmental regionalism at Harvard's John F. Kennedy School of Government. Your participation and help would be most appreciated. Here are the circumstances and the particulars.

The Historic Setting

In July 1933, Secretary of the Interior Harold L. Ickes, in his capacity as administrator of the Public Works Administration, created a National Planning Board to help guide the distribution of public works relief expenditures. In December 1935, the Board (renamed the National Resources Committee) issued a report, *Regional Factors in National Planning and Development*, an attempt to describe and define the use of regions for social and economic development. As part of its analysis, the Board/Committee sought the advice of twelve prominent regional scientists, posing three questions to them:

(a) What do you conceive a region to be? Upon what basis would you delineate a region?
(b) What comments can you make regarding the size of regions, the nature of their boundaries, and their relation to State lines?
(c) What, in your opinion, is the best type of region for use in regional planning and development?

A synthesis of the responses was used to recommend a set of national planning regions and regional planning centers for construction and development, an approach that was intended to guide the efforts of the federal government and the states during the decade of the New Deal.

The Current Setting

As the country turns the corner into a new millennium, I believe that a similar need exists for regional policy definition - this time relating to the use of regions for environmental purposes. Various regional approaches are being advocated - among the most prominent, by

watersheds and by ecosystems. Many have their own designated fields of specialty e.g., ecosystem management, bioregionalism, landscape ecology, regional geography. The objectives to be served also have their own nomenclatures and advocates e.g., biodiversity conservation, sustainable development, open space preservation, and growth management. Yet, the fundamental problem has not changed much in sixty years' time: how to approach resource and environmental needs in configurations that match their real dimensions and transcend the constraints of conventional administrative and political jurisdictions. Much like the earlier New Deal era, there is again a need to describe and define the uses of regions, explore consensus on methods of approach, and suggest directions for future public policy.

The Environmental Regionalism Project

To pursue such objectives, a modem group of North American regionalists has been identified. Their views are now being solicited on the following questions:

(a) What to do conceive an environmental region to be, and upon what basis would you delineate such a region?

(b) To what extent should environmental attributes (vis-à-vis social, economic, or political characteristics) determine the size of regions, the nature of their boundaries, and their ***relation to existing*** *jurisdictions?*

(c) What in your opinion is the best type of region for environmental protection, use, or management?

(d) What administrative, policy, or legislative means (if any) would you advocate to encourage the establishment and use of environmental regions?

A preliminary synthesis of the responses (with attribution), accompanied by analytical commentary, will be prepared and distributed to all respondents by December 1999. The material will be used initially in a graduate course on environmental regionalism at the Kennedy School in the fall of 1999. A revised version is expected to serve as a briefing paper for a special colloquium on environmental regionalism to be convened at Harvard University's John F. Kennedy School of Government in the spring of 2000. A final project report containing findings and recommendations will be available by December 31, 2000.

The Response Requested

If you are willing to participate in this unique inquiry, please provide your answers to the four questions posed by July 1, 1999. Hard copy is preferred, but responses may also be submitted by Email:

Charles_foster@harvard.edu

In answering the questions, you are encouraged to provide examples of success and failure in actual practice. Please also feel free to suggest other regionalists who should be invited to submit responses.

For your information, the research project is being advised by Alan A. Altshuler, director of Harvard University's Taubman Center for State and Local Government, and Roger E. Kasperson, director of Clark University's George Perkins Marsh Institute. Research geographer William B. Meyer is assisting me with the project.

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Appendix C:

RESPONDENTS

1. Alexander, Donald (Vancouver, BC)
   Bioregionalist and Professor, School of Resource and Environmental Management, Simon Fraser University
2. Bailey, Robert (Fort Collins, CO)
   Geographer and ecoregional specialist, Ecosystem Management Analysis Center, US Forest Service
3. Bendick, Robert (Altamonte Springs, FL)
   Former state natural resources director/commissioner for RI and NY, now Florida Chapter Director and Southeast Division Vice President, The Nature Conservancy
4. Berg, Peter (San Francisco, CA)
   Founder and Director, Planet Drum Foundation, and Board Member, Bioregional Association of North America
5. Binkley, Clark S. (Boston, MA)
   Economist and former Dean, Faculty of Forestry, University of British Columbia, and now Senior Vice President, Hancock Timber Resource Group, John Hancock Mutual Life Insurance Company
6. Burch, William R. (New Haven, CT)
   Sociologist and Professor of Natural Resources Management, Yale School of Forestry and Environmental Studies
7. Caldwell, Lynton K. (Bloomington, IN)
   Political scientist and Professor Emeritus, School of Public and Environmental Affairs, Indiana University
8. Carbonell, Armando (Cambridge, MA)
   Planner and former Executive Director, Cape Cod Commission, now Director of the Program for Land as Common Property, Lincoln Institute for Land Policy
9. Caulfield, Henry P., Jr. (Fort Collins, CO)
   Former official, US Department of the Interior and former Executive Director, US Water Resources Council
10. Cerino, Harry E. (Philadelphia, PA)
    Former President and Senior Fellow, William Penn Foundation, now with the Pennsylvania Economy League
11. Cody, Betsy A. (Washington, DC)
    Specialist, Environment and Natural Resources Division, Congressional Research Service
12. Davies, J. Clarence III (Washington, DC)
    Director, Center for Risk Management, Resources for the Future

13. Duane, Timothy (Berkeley, CA)
Professor, Department of City and Regional Planning, Landscape Architecture, and Environmental Planning, University of California
14. Duncan, Angus (Portland, OR)
President, Columbia/Pacific Institute, Mark O. Hatfield School of Government, currently Executive Director, Bonneville Environmental Foundation
15. Dworsky, Leonard B. (Ithaca, NY)
Professor Emeritus, Department of Civil and Environmental Engineering, Cornell University
16. Forman, Richard T.T. (Cambridge, MA)
Landscape ecologist and Professor, Department of Landscape Architecture, Graduate School of Design, Harvard University
17. Fort, Denise D. (Albuquerque, NM)
Former Chair, Western Water Policy Review Advisory Commission, and Professor of Law, University of New Mexico
18. Friedmann, John (Los Angeles, CA)
Professor, Department of Urban Planning, University of California
19. Golley, Frank B. (Athens, GA)
Ecologist and Research Professor, Institute of Ecology, University of Georgia
20. Healy, Robert G. (Durham, NC)
Economist and Professor, Nicholas School of the Environment, Duke University
21. Ingerson, Alice E. (Jamaica Plain, MA)
Anthropologist and Associate Director, Institute for Cultural Landscape Studies, Arnold Arboretum
22. John, DeWitt (Washington, DC)
Author of *Civic Environmentalism* and Director, Center for the Economy and the Environment, National Academy of Public Administration
23. Joy, Chester (Washington, DC)
Senior Evaluator for Energy, Resources & Science Issues, General Accounting Office
24. Keiter, Robert B. (Salt Lake City, UT)
Director, Wallace Stegner Center and Professor of Law, University of Utah
25. Kemmis, Daniel (Missoula, MT)
Former Speaker of the Montana House of Representatives and Mayor of Missoula, now Director, Center for the Rocky Mountain West, University of Montana
26. Knight, Richard L. (Fort Collins, CO)
Professor, Department of Fishery and Wildlife Biology, Colorado State University
27. Luccarelli, Mark (Oslo, Norway)
Associate Professor of American Studies, University of Oslo and author of *Lewis Mumford and the Ecological Region*
28. Lyman, Martha West (Concord, NH)
Program Officer, New Hampshire Charitable Foundation

29. McGinnis, Michael V. (Santa Barbara, CA)
Acting Director, Ocean & Coastal Policy Center, University of California and Director, Center for Bioregional Conflict Resolution
30. McHarg, Ian (Philadelphia, PA)
Professor Emeritus, Department of Landscape Architecture and Regional Planning, University of Pennsylvania
31. National Association of Regional Councils
Executive Summary, 1999 Washington Policy Conference
32. Noss, Reed F. (Corvallis, OR)
Ecologist and Professor, Department of Fisheries and Wildlife, Oregon State University
33. Odum, Eugene P. (Athens, GA)
Ecologist and Director Emeritus, Institute of Ecology, University of Georgia
34. Omernik, James M. (Corvallis, OR)
Geographer and ecoregionalist, Environmental Research Laboratory, US Environmental Protection Agency
35. Peirce, Neal (Washington, DC)
Journalist and author, founder of The Citistates Project
36. Popper, Deborah and Frank (New Brunswick, NJ)
Originators of "The Buffalo Commons" concept and, respectively, Department of Political Science, Economics, and Philosophy, College of Staten Island (NY) and Department of Urban Studies and Community Health, Rutgers University (NJ)
37. Schad, Theodore M. (Arlington, VA)
Former Executive Director, Senate Select Committee on National Water Resources and the National Water Commission
38. Smith, Theodore M. (Boston, MA)
Executive Director, Henry P. Kendall Foundation
39. Soukup, Michael (Washington, DC)
Associate Director for Natural Resource Stewardship and Science, National Park Service
40. Steiner, Frederick (Tempe, AZ)
Professor and Director, School of Planning & Landscape Architecture, Arizona State University
41. Suh, Rhea S. (Menlo Park, CA)
Program Officer, William and Flora Hewlett Foundation
42. Tebaldi, David (South Hadley, MA)
Executive Director, Massachusetts Foundation for the Humanities
43. Tunnacliffe, Nick (Ottawa, ON)
Commissioner, Planning and Development Approvals, Region of Ottawa-Carlton
44. Viessman, Warren, Jr. (Gainesville, FL)
Associate Dean and Professor of Environmental Engineering Sciences, College of Engineering, University of Florida
45. Wallach, Bret (Norman, OK)
Professor, Department of Geography, University of Oklahoma

46. White, Denis (Corvallis, OR)
Research geographer, National Health & Environmental Effects Laboratory, US Environmental Protection Agency
47. White, Gilbert F. (Boulder, CO)
Professor Emeritus, Institute of Behavioral Science, University of Colorado
48. Wiken, Ed B. (Ottawa, ON)
Chairman, Canadian Council on Ecological Areas, Environment Canada