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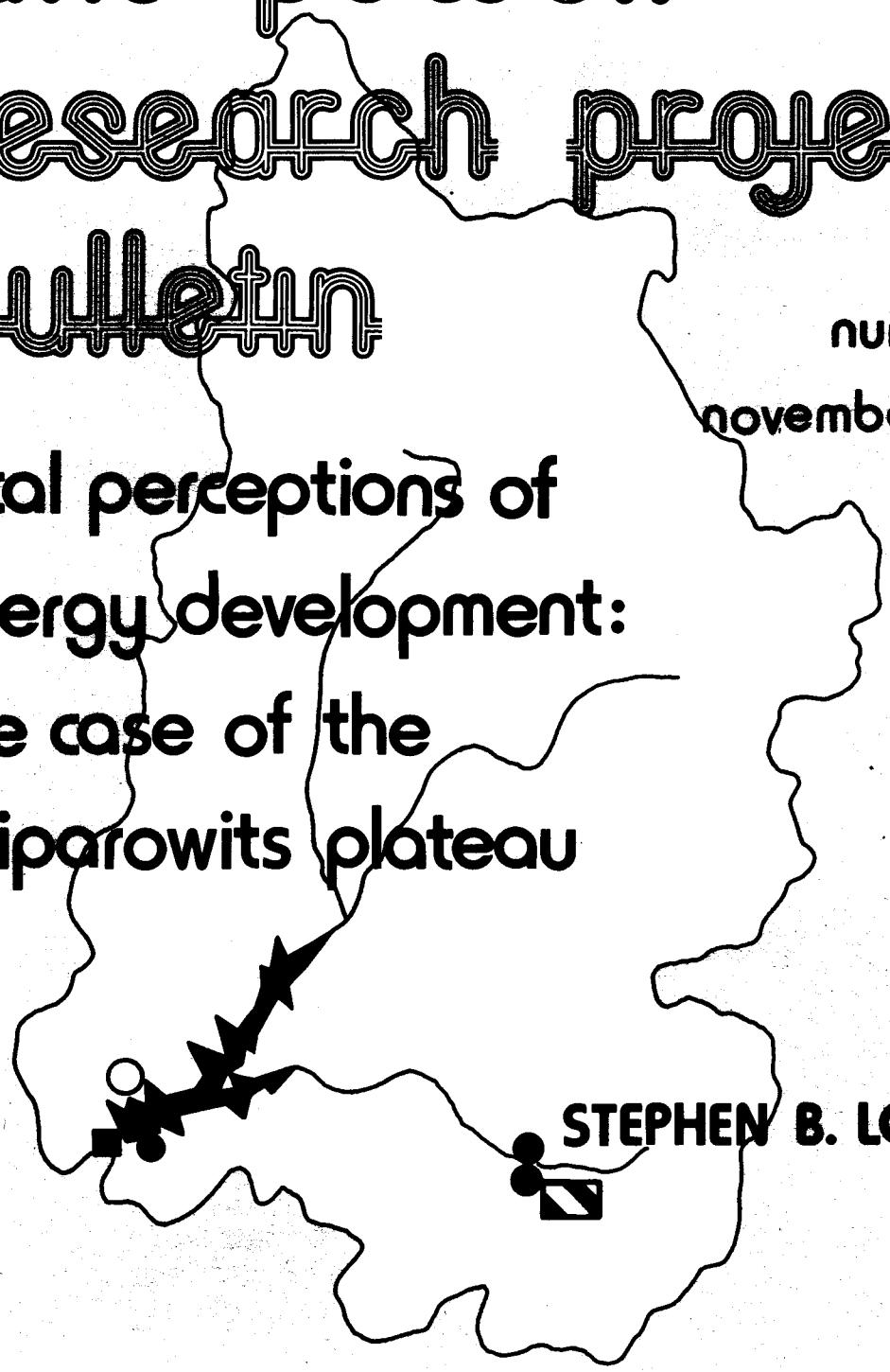

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National Science Foundation
Applied to National Needs

LAKE POWELL RESEARCH PROJECT BULLETIN

BULLETIN EDITORS

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LOCAL PERCEPTIONS OF ENERGY DEVELOPMENT: THE CASE OF THE KAIPAROWITS PLATEAU

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November 1977

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LAKE POWELL RESEARCH PROJECT

The Lake Powell Research Project (formally known as Collaborative Research on Assessment of Man's Activities in the Lake Powell Region) is a consortium of university groups funded by the Division of Advanced Environmental Research and Technology in RANN (Research Applied to National Needs) in the National Science Foundation.

Researchers in the consortium bring a wide range of expertise in natural and social sciences to bear on the general problem of the effects and ramifications of water resource management in the Lake Powell region. The region currently is experiencing converging demands for water and energy resource development, preservation of nationally unique scenic features, expansion of recreation facilities, and economic growth and modernization in previously isolated rural areas.

The Project comprises interdisciplinary studies centered on the following topics: (1) level and distribution of income and wealth generated by resources development; (2) institutional framework for environmental assessment and planning; (3) institutional decision-making and resource allocation; (4) implications for federal Indian policies of accelerated economic development of the Navajo Indian Reservation; (5) impact of development on demographic structure; (6) consumptive water use in the Upper Colorado River Basin; (7) prediction of future significant changes in the Lake Powell ecosystem; (8) recreational carrying capacity and utilization of the Glen Canyon National Recreation Area; (9) impact of energy development around Lake Powell; and (10) consequences of variability in the lake level of Lake Powell.

One of the major missions of RANN projects is to communicate research results directly to user groups of the region, which include government agencies, Native American Tribes, legislative bodies, and interested civic groups. The Lake Powell Research Project Bulletins are intended to make timely research results readily accessible to user groups. The Bulletins supplement technical articles published by Project members in scholarly journals.

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ABSTRACT

Proposed energy developments in the predominately rural Four Corners area of the Southwest are threatening the residents' lifestyles. Data from a simple random sample of household heads in several rural communities in southern Utah and northern Arizona lend support to the proposition that the local citizens are eager to have large-scale energy projects in the Four Corners region. The citizens are active partners with industry in pressing for governmental approval of the projects and are willing to exchange elements of their current lifestyles for what are perceived as economic and employment benefits. The analysis presented here suggests that they tend to overemphasize the expected benefits while de-emphasizing, or remaining ignorant of, potential disadvantages resulting from such developments. Some explanations for this behavior are examined.

INTRODUCTION

In the past several decades, the energy demands of the United States have increased dramatically. However, many of the raw materials necessary to meet this increased demand have come from sources outside the nation. Since the onset of the "energy crisis" in 1973, the United States has embarked upon an energy self-sufficiency program, ostensibly to protect itself from dependence upon imported energy. One of the major components of this program is the increased exploitation of coal resources in the western United States, especially in the Northern Great Plains and Four Corners regions. Many communities in these two areas are presently experiencing or are preparing for the impacts of large-scale coal mining (both underground and strip mining), construction of plants to transform the coal into electricity or synthetic natural gas, and other related projects. As a result, phenomenal population growth is expected in these areas, and comprehensive programs are required to accommodate the growth.

Southern Utah, like much of the West, is sparsely populated. Residents have not received economic benefits commensurate with the U.S. society as a whole, but their region abounds with energy resources, including huge deposits of coal, oil, and natural gas. At present (1977), southern Utah is projected as the site for several coal-fired electrical generating plants as well as other developments such as oil shale recovery and coal gasification (Little, 1976). The present analysis focuses on the socioeconomic effects of <u>one</u> proposed coal-fired electrical generating project in southern Utah: the now-defunct Kaiparowits project.

In 1963 a consortium of three utility companies outside Utah proposed to build a 3000-megawatt coal-fired electrical generating plant in southern Utah to provide energy for areas of Arizona and Southern California. The coal for the proposed project was to be obtained from Utah's Kaiparowits Plateau, which is primarily federal land; the associated generating station was to be located nearby. Coal reserves on the Kaiparowits Plateau have been known for years, but site plans for the proposed generating station were not created until 1964. Although the environmental impact statement for the Kaiparowits project was accepted and approved, construction did not begin during 1976 because of intense political pressure put on Southern California Edison, the largest utility in the consortium, by the National Park Service and environmental groups. The project was set aside in April 1976 for an indefinite period.[1]

The Kaiparowits project has received nationwide attention as a result of the controversy surrounding its effects on several national parks, national monuments, other scenic areas, and recreational facilities in the area (i.e., Bryce Canyon, Zion, Grand Canyon, Glen Canyon, and Lake Powell). Opponents of the project indicate probable damage to these national scenic resources as well as social disruption in nearby local communities. Proponents stress the nation's increased need for energy as well as the benefits accruing to local residents in the form of increased tax revenues, employment opportunities, and economic development. Local residents seemed overwhelmingly in favor of the project (Little, 1976; Albrecht, 1972), and local activities further indicated their eagerness for the project.[2]

Residents of the area surrounding the proposed project were often characterized as willing to "trade off" certain aspects of their current lifestyle for anticipated employment and economic benefits. Such a characterization appears to assume that they had accurate perceptions about the effects of the development upon themselves and their communities. One study has indicated that the residents of southern Utah often had limited and inaccurate information about even factual aspects of the development. Many local residents seemingly had faulty conceptions of the number of workers needed, the amount of water to be used, and the level of pollution to be expected (Albrecht, 1972). If the residents were also uninformed or misinformed about potential changes resulting from the project, statements concerning the eagerness of local people to make a tradeoff are not what they seem, for these "reasoned" tradeoffs were all too frequently based upon inadequate information; that is, consent had been obtained from residents who were not fully informed. This Bulletin assesses the local population's perceptions of consequences stemming from the project, specifically the perceived tradeoffs. These perceived tradeoffs are then compared with the effects experienced by other communities undergoing massive energy development or other types of rural industrialization.[3]

THE STUDY

Our research was conducted during the summer of 1974 in Kanab, Blanding, Monticello, and Escalante, Utah; and Page, Arizona.[4] These communities were selected because of their proximity to the proposed development and the probability that they would experience substantial impact from the construction and operation of the proposed facility. The four

Utah communities are quite small and of a decidedly rural, small town nature, while Page is a moderately sized community built and sustained on the whole by the construction and operation of Glen Canyon Dam and the Navajo Generating Station. An open-ended interview was conducted with 407 household heads selected from a simple random sample.[5]

PERCEIVED AND PROBABLE EFFECTS OF THE DEVELOPMENT OF THE KAIPAROWITS PLATEAU

It is imperative to analyze local perceptions concerning the effects of development as compared to the probable effects if we are to use meaningfully the concept of local tradeoffs. The local residents might not have accurately understood what they were to sacrifice and what they were to gain. The 407 respondents we interviewed were asked to indicate the changes or effects they believed would result from the development of the Kaiparowits project. The question was open-ended, allowing the respondents to answer in any manner they deemed appropriate. They were also asked if the perceived changes were positive or negative. Respondents were encouraged to list as many changes as possible although few listed more than five. The first five changes mentioned by each respondent were determined as the most salient effects for that individual, and additional responses were not included in the analysis.

As might be expected, the vast majority of respondents (72 percent) anticipated some type of change or effect upon the local economy,[6] including local employment opportunities (Table 1). Furthermore, almost all economic changes (75 percent) were perceived as beneficial. Thus respondents not only saw the beneficial effects as substantially

Table 1: Perceived Effects Resulting from the Development of the Kaiparowits Plateau[a]

Type of Effect[b]	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
Economic	297	25	6	2
Employment	183	7	2	-
Social	261	95	38	1
Environmental	14	62	4	-
Miscellaneous	107	44	8	1

Note: Tables 1 through 6 report the combined responses for Page, Kanab, Blanding, Monticello and Escalante. For responses in each individual community, see the Appendix.

[a]Twenty-nine respondents reported that they had never heard of the Kaiparowits project, 42 reported that they did not know what the effects would be, and 2 refused to answer. The above effects, therefore, are the responses of the remaining 334 respondents.

[b]The specific effects comprising these general categories are indicated in Tables 2 through 6.

outweighing the negative effects, but they seemingly viewed themselves as good traders who were going to receive much more than they would be required to pay. This is probably indicative of a generally held belief in their own astuteness as well as in the blessings of development and the inherent good of industrial and technological progress.

Economic Effects

Although the respondents indicated that they expected positive economic effects to result from the development of the Kaiparowits Plateau, many were not specific about the exact nature of these effects, and they chose to indicate general progress, growth, or prosperity. Table 2 indicates that nearly half of the economic responses were in the non-specific category. An exact assessment of the likely progress or prosperity caused by the project is impossible since progress and prosperity are vague and general concepts, but several studies have indicated that local communities undergoing industrialization have not progressed or prospered to the extent expected (Wadsworth and Conrad, 1966; Smith et al., 1971; Clemente, 1975; Nolan and Heffernan, 1974).

An examination and comparison of more specific economic effects may assist in the assessment of the probability of general progress and prosperity. The specific effects receiving the most mention were increased retail sales and an increase in local tax revenues. These two categories accounted for nearly 35 percent of the reported economic effects, which, when combined with general progress, accounts for nearly 85 percent of all reported economic effects. While some increase in retail sales would certainly occur

Table 2: Perceived Economic Effects Resulting from the Development of the Kaiparowits Plateau

Specific Economic Effects	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
General Progress, Growth Prosperity	138	1	2	1
Increased Retail Sales	51	2	1	-
Change in Personal Standard of Living	29	8	-	-
Increase in Tax Revenues	59	-	-	1
Increase in Tourism	11	-	-	-
Increased Property Values	9	7	2	-
Other Economic Effects[a]	-	7	1	-
Total	297	25	6	2

[a]This category includes boom-bust economy, industrial and business monopolies, excessive local economic expectations, and adverse effects upon existing businesses.

if 20,000 people were added to this rural area, the magnitude of that increase was unknown. Three factors which would mitigate the impact upon retail sales near any Kaiparowits operation are (1) the distances of Kanab, Blanding, Monticello, and Escalante from the new community, (2) the availability of more services in Page, Arizona, which is closer to the site of such a new community than are the Utah communities, and (3) other studies which suggest that in-migrant industrial workers often choose to shop for many items in larger metropolitan trade centers (Polizin, 1974; Summers, 1973). Sales increases would not be likely to occur in groceries and food products. Several workers in Page reported that they owned their mobile homes and appliances before moving to the area and preferred to travel to larger trade centers (e.g., Phoenix and Salt Lake City) for entertainment, clothing, and large purchases such as cars, trucks, and appliances. Some individuals reportedly even purchased a large proportion of their groceries in larger trade centers, buying only perishable goods locally. This appears to be particularly the case with the transient construction workers.

An increase in tax revenues was mentioned quite frequently and is undoubtedly a truism. The dilemma in discussions about the effects of industrialization upon tax revenues centers around two points: (1) there is usually a time lag between increased expenditures and increased revenues, and (2) the governmental unit that receives the increased revenues may not be the same unit being required to increase expenditures. On the first point, an increase in tax revenues may not occur for several years after a project is initiated, while increased expenditures for roads, schools, water, police and fire protection, sewers, etc., are required

before the workers begin moving into a community. This lag between needs of the infrastructure and tax income to satisfy those needs creates a hardship on all residents, but especially on those who are not receiving the higher wages which are paid to the workers on the project. Communities are forced to support these expanded services prior to receiving increased taxes, often through the issuance of bonds. The effects of this bonding indebtedness are not usually distributed equally throughout the community. Because the amortization period for such bonds is usually extended well beyond the time when the construction work force has moved on to another project and another community, the residents who remain in the community still must repay the bonds. Even <u>if</u>, in the long run, total revenues exceed total additional expenditures, many problems including an <u>increase</u> in personal property taxes may be experienced by local residents (Polzin, 1974; Smith et al., 1971; Derr and Kasper, 1970). The second point centers around the problem of a discrepancy between the governmental unit getting the increase in revenues and that unit being required to increase expenditures. In the case of southern Utah, the county and state would be the recipients of the increased taxes, while many of the costs would be borne by the local communities. These local communities, to the extent they experience increases in population, would be required to provide increased services, necessitating an increase in expenditures, but would not benefit from the increased tax base represented by the generating facility or mine. One researcher has commented that at present the only feasible method for communities encountering this problem is to unincorporate (Allen, 1975).[7]

Other effects mentioned were changes in personal finances, an increase in tourism, and increased property values. Although some members of the local community would surely benefit financially, others, such as those on fixed incomes, female heads of households, and the aged, would almost certainly suffer (Summers, 1973; Clemente, 1975). Several respondents indicated that they perceived an increase in tourism, although such an attitude seems incompatible with a recent study by the National Park Service (1976).[8] Respondents were divided on the blessings of an increase in property values, some seemingly perceiving that such an increase is positive only if one plans to sell, and, therefore, that property value increases would not benefit many of the local residents. In fact, such increases might prove harmful to many since as the value of an individual's property increases so do his taxes, even if the rate of taxation remains constant.

In sum, it seems that local residents and their communities probably would not receive many of the economic benefits they expected, and those benefits they did receive might not be of the magnitude expected. Local residents seemed to have unrealistic expectations about the economic benefits resulting from the development of the Kaiparowits Plateau, and to the extent that these unrealistic expectations entered into their assessment of costs and benefits, their cost calculus might have been erroneous.

Employment Effects

The only major employment effect indicated by the respondents was an increase in opportunities for permanent employment (cf. Table 3). This is undoubtedly true, but

Table 3: Perceived Employment Effects Resulting from the Development of the Kaiparowits Project

Specific Employment Effects	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
Increased Permanent Employment	178	-	2	-
Creation of Job Training Program	2	-	-	-
Employment Will Go to Outsiders	1	5	-	-
Other Employment Concerns[a]	2	2	-	-
Total	183	7	2	-

[a]This category includes increased temporary employment, increased unionization, and effects upon respondent's present job.

some difficulties arise in determining who receives those new positions. Our respondents indicated they believed local individuals would receive substantial employment in the construction and operation of the proposed facility. Several studies of industrialization in rural areas suggest, however, that many of the new positions would be taken by commuters from distant areas, in-migrants, or persons not previously in the labor force (Somers, 1958; Summers and Beck, 1972; Scott, 1973; Peterson and Wright, 1967; Morrison et al., 1974). This phenomenon is often attributed to the rural population's lack of appropriate industrial skills which necessitates that industries import workers from other areas (Miernyk, 1971; Field and Copp, 1971). A recent analysis of employment benefits accruing to local residents from the proposed Kaiparowits project suggests only minimal benefits for locals (Little and Lovejoy, 1976).

Although local residents seemed to be expecting substantial employment opportunities and benefits, the experience of other rural communities undergoing industrialization suggests only slight benefits in the area of employment. This further suggests that local residents do not accurately perceive the benefits they would receive from the development of the Kaiparowits Plateau.

Social Effects

Over 40 percent of the social effects specified by our respondents were in the category of population increase; a majority of these effects were viewed positively (Table 4). Few respondents seemed to realize that an increase of 20,000 persons could mean substantial and possible negative impacts upon a county with a 1970 population of 2421 (U.S. Bureau of

Table 4: Perceived Social Effects Resulting from the Development of the Kaiparowits Plateau

Specific Social Effects	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
Population Increase	97	45	31	1
Change in Availability or Number of Community Services	81	22	4	-
Change in Local Social Problems	1	19	-	-
Change in Rate of Out-Migration	43	1	1	-
Change from Rural to Urban Orientation (Less Isolated)	36	7	2	-
Other Social Effects	3	1	-	-
Total	261	95	38	1

the Census, 1973: Table 9). While some aspects of an increase in population may be positive and beneficial, such as increases in educational and medical facilities, certainly a population increase of over 900 percent would have many negative and harmful aspects as well. The possible tax problems associated with such a massive increase in population have been mentioned. In addition, the effects of this growth would likely be felt in nearly every aspect of the life of the community. Many researchers of the community growth process have suggested that such growth does not stop at a sheer increase in numbers, but actually constitutes a new way of life (Wirth, 1964). This new way of life is quite divergent from that typically found in rural communities. Secondary relationships begin to predominate, kinship bonds decline, life becomes overwhelmingly conditioned by economic factors, and individuals become anomic (Wirth, 1964). While many respondents seemed to be cognizant of the benefits associated with such a massive population increase, they seemed to discount or ignore the negative aspects.

The second most mentioned social effect was a change in the availability or number of local community services or facilities such as medical, recreational, water, and police and fire protection. Most respondents suggested that changes in these areas would be positive and beneficial for the community. While growth in many public service sectors would likely result from the large population increase, the demand for the services and facilities might grow more rapidly than the ability of the communities to provide such services and facilities. One researcher suggests that if a community experiences a growth rate in excess of 10 percent, local public services and facilities will be unable to keep

pace with the increased demand (Allen, 1975). Further aggravating the strain on local community services is the tendency for the in-migrants to be accustomed to a higher level of public services than the rural community has traditionally provided (Albrecht, 1972). Local communities may find it impossible to provide the quantity and quality of services demanded by their new members, and present residents may find access to public services and facilities more of a problem than they had in the past.

As seen in Table 4, few respondents saw any change in local social problems such as increased crime or juvenile or drug problems. Some respondents indicated that crime, drugs, etc., were not currently serious social problems and would, therefore, not be serious problems in the future. While these highly integrated communities may be able to control such behavior at present, such control among thousands of new community members is highly unlikely. In another community undergoing massive energy development and population growth (Rock Springs, Wyoming), criminal activity has increased tremendously. A local police official commented that the increase was so drastic that at one point they "didn't know whether the good guys were going to win or the bad guys. It was a toss-up" (Avery, 1975). Calls for police services in Rock Springs increased by over 400 percent between 1969 and 1974, and nearly every category of criminal activity had tremendous rates of increase: burglaries skyrocketed, drunkenness and driving under the influence of alcohol increased over 300 percent, arrests for prostitution increased from none in 1969 to over eighty in 1975, arrests for concealed weapons increased from two in 1969 to over eighty-five in 1975, drug problems and drug-related incidents "exploded," and juvenile problems increased substantially. Such serious problems of course pertain not only to

Rock Springs; these problems seem to be typical of those experienced by all communities undergoing massive population growth in such a short interval. The problems experienced in Rock Springs would seem to provide indicators, although not predictors, of the social problems to be experienced by other energy development areas including southern Utah.

Many rural areas such as southern Utah have experienced widespread out-migration, especially of young persons. Several respondents felt that the Kaiparowits development would halt the flow of young persons from their communities, and this was seen as a positive social consequence of development. Respondents suggested increased employment as the major factor in halting the out-migration of young persons. Although a possible effect, several researchers suggest that industrial development may not affect the out-migration of youth from rural areas (Clemente, 1975; Polzin, 1974; Andrews and Baudner, 1967; Morrison et al., 1974). It is suggested that employment is not the only factor entering into the decision to leave the area; a desire to experience and see more of the world or a yearning for independence may emerge as primary factors in many migration decisions.

The final type of social effect mentioned by the respondents was a change in the orientation of the community. Some respondents envisioned this as a shift from a rural orientation to a more urban orientation while others saw the community becoming less isolated from the dominant urban culture. While some such changes would surely occur, very few respondents mentioned this as a probable effect of the development. Such changes and shifts might have substantial impact upon local values, attitudes, and world views (Turner, 1971). This category of effects seems quite important since many

respondents indicated their satisfaction with their community and their present pace and style of life. Albrecht (1972) also found that, overall, residents were satisfied with their current lifestyle and the orientation of their community. Overlooking or ignoring the impacts of industrial development upon their present lifestyle might lead to serious disillusionment in the future.

By and large, the respondents seem either to be unaware of or unwilling to recognize the negative social effects accompanying any massive development such as the Kaiparowits project. It may well be the case that they were deemphasizing such effects and that their optimism was not restrained. This raises additional questions about the local population's knowledge of probable impacts and, therefore, the adequacy of the idea that they are making a "reasoned tradeoff."

Environmental Effects

As Table 1 indicates, very few environmental effects were mentioned by our respondents. Fewer than 7 percent of all effects were mentioned in the area of the environment. The one major effect (65 percent) considered was an increase in pollution (Table 5). On the other hand, while relatively few respondents perceived an increase in pollution, the U.S. Department of the Interior (1976) and the National Park Service (1976) predicted moderate to extreme increases in pollution and decreases in air quality if the Kaiparowits project were constructed. Few residents seemed willing to accept the proposition that development has many negative as well as positive impacts. The unwillingness of local residents to accept the idea of decreased air quality may be an

Table 5: Perceived Environmental Effects Resulting from the Development of the Kaiparowits Plateau

Specific Environmental Effects	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
Increased Air or Water Pollution	2	46	4	-
Pollution Will Be Controlled	4	-	-	-
Change in Use of Water Supplies	3	2	-	-
Change in Land Use	5	11	-	-
Other Environmental Effects[a]	-	3	-	-
Total	14	62	4	-

[a]This category includes climatic change.

overreaction to the efforts of environmental groups to block the development of the Kaiparowits project. In addition to the possible overreaction, the optimism of the respondents may be the result of other more immediate desires, ignorance of the impacts, or even a belief that the government will act as a paternal, protective mechanism.

Miscellaneous Effects

Two considerations account for nearly 70 percent of all miscellaneous responses: (1) increased energy or power, and (2) creation of a new town (Table 6). While an increase in available electrical power from a 3000-megawatt generating station is apparent, a few respondents suggested some negative aspects since none of the generated power would be available for local consumption.[9] Some respondents suggested that one effect of the Kaiparowits development would be the creation of a new town in the county. While the creation of a town with a population of 15,000 to 20,000[10] in a county of 2500 persons seems to indicate a substantial impact, few respondents indicated they thought of it as major. The new community might, in addition to a simple increase in county population, affect the present patterns of government. The influx of registered Democrats, which dominate in most populations of labor union members, into a traditionally Republican county might create severe problems of accommodation. As the population of the new community increases, a probable effect would be a shift in the dominance over county government. The dominance and influence of present communities would wane and would be captured by the newly established community.

Table 6: Perceived Miscellaneous Effects Resulting from the Development of the Kaiparowits Plateau

Specific Miscellaneous Effects	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
Effects on Political Structure	3	16	-	1
Effects on Native Americans	12	-	-	-
More Energy Will Be Available	57	4	1	-
Resources or Money Will All Flow Out of Area	1	17	1	-
New Town Will Be Created	33	6	6	-
Other Effects[a]	1	1	-	-
Total	107	44	8	1

[a]This category includes safety hazards and serendipitous discoveries (e.g., water).

The effect of industrial development upon leadership structures is certainly not predictive, but in one instance industrial development had a marked effect upon the centralization, concentration, and stability of county leadership structures. The effects of industrialization were most noticeable in the overlapping spheres of leadership. Business and governmental spheres of leadership showed more overlapping after industrialization than before, suggesting increasing dominance of business leaders in local government (Summers, 1973). While a few respondents indicated that the development of the Kaiparowits Plateau would have negative effects upon the political structure, the overwhelming majority did not mention any political impacts. These respondents and their communities would likely have experienced much more extensive political change than was anticipated.

Miscellaneous effects accounted for only 14 percent of the reported effects, but again this illustrates the respondents' overwhelmingly favorable attitudes toward the development of the Kaiparowits Plateau. The responses suggest a de-emphasis of negative effects and an overemphasis of positive effects.

Summary

Respondents in the present sample suggested numerous positive effects resulting from the development of the Kaiparowits project. While some benefits undoubtedly would have accrued to present residents, the experiences of other people in areas undergoing industrial development suggest that local people will likely not receive the magnitude of benefits expected. Local residents perceived substantial employment and economic benefits from the proposed project, but

a substantial body of research suggests that many, if not most, of the increased employment opportunities and the economic benefits would be captured by in-migrants.

In addition, relatively few respondents indicated that the development would have negative effects. Industrialization in a rural area will assuredly have some negative or undesirable consequences. Research and reports from other industrializing communities suggest that negative consequences may be more substantial and far-reaching than was ever intended or anticipated. A rising crime rate, strains on community services and facilities, economic hardships for those on fixed incomes, increased pollution, and loss of local political control all represent substantial negative effects which the local residents have generally chosen to de-emphasize or ignore.

SUMMARY AND DISCUSSION

Respondents in the present study tended to confirm the generally held belief of widespread local support for the development of a coal-fired electrical generating facility on the Kaiparowits Plateau. Residents seemed to be willing to trade off or exchange elements of their current lifestyle for the economic and employment benefits they expected to receive. A comparison of the respondent's anticipated effects with the probable effects suggests that the local residents tended to overemphasize the positive effects and to de-emphasize, or even ignore, the negative consequences. The present analysis suggests the local people would not receive the magnitude of benefits expected. In addition, the negative consequences would be much more substantial than anticipated by the local residents. The respondents

apparently did not understand that such large-scale development would have massive effects on their current personal lifestyles as well as on the modes of interaction and basis of cohesion in the community. In addition, they seemed unwilling to recognize that development would mean enormous investments to develop community infrastructures. This raises serious doubts about the appropriateness of the concept of the local residents making a "reasoned tradeoff." It must be questioned whether or not the local residents' willingness to exchange elements of their current lifestlye might be radically different if they had accurate perceptions about the positive and negative consequences of the development.

Why do local residents tend to have such seemingly inaccurate expectations? Have the residents, as suggested by Albrecht (1972), based their opinions and expectations upon rumor, gossip, and word-of-mouth communications rather than seeking out more accurate sources of information? In the present sample, over 50 percent of the respondents listed as their primary source of information about Kaiparowits the news media or governmental communications. Only 25 percent of the respondents listed word-of-mouth as their primary source of information. The majority of respondents were apparently receiving much of their information from established sources such as the news media and governmental officials.

As sources of information, the news media and government have the traditional responsibility of providing the public with adequate information to enable citizens to make rational intelligent choices. Have these sources been negligent in their public responsibility to provide accurate

unbiased information: Have the local residents been negligent in their responsibility to seek out, interpret, and analyze available information?

Although difficult to substantiate, it seems likely that the local news media and governmental officials did not present a totally accurate assessment of the impact of the development of the Kaiparowits Plateau. Three thousand jobs were mentioned but little analysis of who would receive them was presented; an increased tax base was highlighted but increased expenditures received little mention; and increased population was mentioned as a source of increased business activity but not as a source of increased criminal activity. Much of this may be attributable to a lack of adequate data and analysis.[11] The news media and governmental officials relied extensively on data and analyses provided by the utilities. Although this information may often have been incomplete or exaggerated, the local media and officials seldom had the expertise or finances available to conduct their own assessments. The utilities were obviously going to present an overall positive assessment in order to secure approval and support for their proposed development. Even those assessments provided by the utilities may have been quite difficult to interpret and comprehend. For example, the utilities reported that they would remove 99 percent of the particulate matter from their exhaust emissions. This sounded quite impressive, but the remaining 1 percent represents tons of particulate matter. Even with this knowledge, what does several tons of particulate matter in the air look like? What are the ramifications of having tons of particulate matter released into the air? These are reasonably difficult questions for the environmental scientist to answer, let alone the general public. Many

such impacts are highly complex and quite difficult to comprehend. The utilities might be expected to use their expertise to evaluate, interpret, and present information and assessments of such highly complex issues, but such services seem to have been relatively minimal in the case of the proposed Kaiparowits development.

A further problem is that the small amount of research and information available indicating possible adverse consequences of development have largely been unheeded or ignored by the general public as well as much of the local news media and governmental officials. This behavior is more understandable when the sources of much of this adverse information are revealed. Many of these negative assessments came from out-of-state environmentalists or environmental groups seeking to maintain the wilderness character of the area. Local residents and officials tended to view these individuals and groups as attempting to maintain the character of the area at the expense of the local residents. When local residents were confronted with conflicting assessments from environmental groups and project utilities, is it surprising that they totally reject the assessments of the environmentalist? In time, residents and officials seemed to view all adverse assessments as attempts to maintain the area's wilderness character at their expense.

The lack of adequate information at early stages of development and the tendency of local residents and officials to accept the utilities' impact assessments tended to discourage and prevent all later attempts to inject independent unbiased impact assessments into the decision-making processes. If independent assessments are to be useful, they must enter the decision-making process at an early stage.

Such early research and assessments would have allowed all parties to base their attitudes and actions upon accurate perceptions of the consequences of development. In southern Utah, at present (1977), there seems to be little tolerance for those interested in independent unbiased assessments. The local residents and officials seem to force all concerned parties to choose sides; the attitude seems to be "you're either totally for us or you're totally against us."

FOOTNOTES

1. On April 14, 1976, two members of the power consortium which proposed the Kaiparowits project and expended millions of dollars planning for it--Southern California Edison and San Diego Gas and Electric--announced they were withdrawing from the project. Arizona Public Service, the third member of the consortium, indicated that it was unlikely that they would be able to complete the project without seeking new partners and/or reducing the size of the project. The Department of the Interior has subsequently discontinued processing the application for approval, apparently closing the door on the construction of the proposed generating plant. No concrete proposals for utilizing the coal reserves on the Kaiparowits Plateau have been advanced, but recent news stories indicate the possibility of a coal gasification plant. Whatever the eventual outcome, it seems unlikely that such vast coal reserves will remain untapped. The analysis offered here will be helpful and suggestive regardless of the exact nature of the final project.

2. Residents of Kane County formed a citizen's action group ("ALIVE"), and over 40 residents of the county traveled to Washington, D.C., to lobby for the Kaiparowits project with the Secretary of the Interior.

3. Unfortunately, there is very little empirical work available concerning the perceptions of locals regarding the consequences of rural industrialization. For that reason, the perceptions of the residents included in this study cannot be compared with the perceptions of other populations which have undergone massive industrialization.

4. All five communities experienced some growth in the period 1970-1974, with Page having the most dramatic increase as a result of the construction of the Navajo Generating Station. In the 1970 census, the total populations of the communities were as follows: Kanab, 1381; Blanding, 2250; Monticello, 1431; Escalante, 638; and Page, 1439. On the basis of the present sample, population projections for the five communities in 1974 are as follows: Kanab, 2349; Blanding 2773; Monticello, 1829; Escalante, 843; and Page, 6496.

5. For an extensive review of sampling methods and procedures, see Little (1976).

6. Two hundred ninety-three respondents listed at least one economic or employment effect. This represents 72 percent of the total sample of 407 or 87.7 percent of the 334

people who had heard of the project and who listed some changes or effects.

7. New solutions for these problems may soon be available in the form of federal assistance for such impacted communities.

8. In the conclusion to their study, the National Park Service stated

> "Air pollution from the plant will create a significant esthetic intrusion and will substantially reduce visitor appreciation of scenic resources within 60 miles of the plant site...Air pollution will also cause adverse visual and esthetic impact to a moderate degree for up to 100 miles of the plant and beyond...Air pollution will decrease the overall value of a recreation experience within the affected region and it is quite probable that the growth in recreation use will be adversely affected for the life of the project. It is estimated that up to 3 million recreation-use-days would be lost, as would an associated $24 million of tourism-related expenditures. Tourism-related income is extremely important to the economic vitality of the region. An estimated $78 million of recreation value will be lost to those who choose to visit the region regardless of the lower air quality" (National Park Service, 1976: 2-3).

9. No utility which supplied electrical power to Utah elected to purchase the uncommitted 18 percent of the consortium's power output.

10. Estimates of the size of the new community range from 15,324 (U.S. Department of the Interior, 1976:14) to an estimated 26,795, which is based upon the companies' employment estimates, Utah's labor force participation rate, and Utah's proportion of total population between the ages of 20 and 64.

11. Independent studies of the socioeconomic impact of large-scale energy developments have largely been non-existent. Socioeconomic impact studies are generally conducted by those with strong vested interests in the development, such as the utilities involved. The companies biases toward development are difficult, if not impossible, to control in the collection and analysis of data and in the assessment process.

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Any scientific study examining social issues and concerns is bound to collect information that the inhabitants of the study community would rather had remained unnoticed. Furthermore, the conclusions reached from such data are all too frequently at odds with the desires and wishes of at least some local citizens. That this is sometimes the case is truly regrettable, but unavoidable if scientific standards are to be maintained. The Sociology Subproject has attempted to maintain a high level of scientific objectivity, and provides public access not only to the conclusions but the data on which the conclusions were based. Thus, decision-makers and interested scientists, as well as local residents, will have the opportunity to evaluate the conclusions reached in light of the data.

It is sincerely hoped that any disagreements between this author and local denizens will be viewed by the latter as the result of an honest scientific endeavor. Additionally, it is hoped that the information derived from Lake Powell Research Project efforts will help the inhabitants of the five study communities to better understand their communities and facilitate future decisions affecting their communities.

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GLOSSARY

anomic	characterized in individuals by confusion and contradiction in the basic rules of society and relationships; such individuals tend to exhibit a distinct weakening of traditional norms; also known as a condition of normlessness

APPENDIX TABLES

Appendix Table 1: Perceived Effects Resulting from the Development of the Kaiparowits Plateau--Page Respondents[a]

Type of Effect[b]	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
Economic	52	5	1	-
Employment	27	-	1	-
Social	35	12	1	-
Environmental	1	6	-	-
Miscellaneous	31	3	3	-
Total	146	26	6	-

[a]Two respondents reported that they had never heard of the Kaiparowits project. Eight reported that they did not know what the effects would be. The above effects, therefore, are the responses of the remaining 60 respondents.

[b]The specific effects comprising these general categories will be indicated in Appendix Tables 1A through 1E.

Appendix Table 1A: Perceived Economic Effects Resulting from the Development of the Kaiparowits Plateau--Page Respondents

Specific Economic Effects	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
General Progress, Growth Prosperity	34	1	-	-
Increased Retail Sales	7	-	-	-
Change in Personal Standard of Living	3	3	-	-
Increase in Tax Revenues	5	-	-	-
Increase in Tourism	2	-	-	-
Increased Property Values	1	1	1	-
Other Economic Effects[a]	-	-	-	-
Total	52	5	1	-

[a]This category includes boom-bust economy, industrial and business monopolies, excessive local economic expectations, and adverse effects upon existing businesses.

Appendix Table 1B: Perceived Employment Effects Resulting from the Development of the Kaiparowits Plateau--Page Respondents

Specific Employment Effects	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
Increased Permanent Employment	27	-	1	-
Creation of Job Training Program	-	-	-	-
Employment Will Go to Outsiders	-	-	-	-
Other Employment Concerns[a]	-	-	-	-
	—	—	—	—
Total	27	-	1	-

[a]This category includes increased temporary employment, increased unionization, and effects upon respondent's present job.

Appendix Table 1C: Perceived Social Effects Resulting from the Development of the Kaiparowits Plateau--Page Respondents

Specific Social Effects	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
Population Increase	13	7	1	-
Change in Availability or Number of Community Services	8	2	-	-
Change in Local Social Problems	-	1	-	-
Change in Rate of Out-Migration	8	-	-	-
Change from Rural to Urban Orientation (Less Isolated)	4	1	-	-
Other Social Effects	2	1	-	-
Total	35	12	1	-

Appendix Table 1D: Perceived Environmental Effects Resulting from the Development of the Kaiparowits Plateau--Page Respondents

Specific Environmental Effects	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
Increased Air or Water Pollution	-	5	-	-
Pollution Will Be Controlled	-	-	-	-
Change in Use of Water Supplies	1	-	-	-
Change in Land Use	-	-	-	-
Other Environmental Effects[a]	-	1	-	-
Total	1	6	-	-

[a]This category includes climatic changes.

Appendix Table 1E: Perceived Miscellaneous Effects Resulting from the Development of the Kaiparowits Plateau--Page Respondents

Specific Miscellaneous Effects	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
Effects on Political Structure	-	1	-	-
Effects on Native Americans	1	-	-	-
More Energy Will Be Available	16	-	-	-
Resources or Money Will All Flow Out of Area	-	1	-	-
New Town Will Be Created	13	1	3	-
Other Effects[a]	1	-	-	-
Total	31	3	3	-

[a]This category includes safety hazards and serendipitous discoveries (e.g., water).

Appendix Table 2: Perceived Effects Resulting from the Development of the Kaiparowits Plateau[a]--Kanab Residents

Type of Effect[b]	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
Economic	90	6	-	-
Employment	40	2	-	-
Social	59	27	7	-
Environmental	3	6	1	-
Miscellaneous	26	42	3	1
Total	218	83	11	1

[a]One respondent reported that he had never heard of the Kaiparowits project, one reported that he did not know what the effects would be, and one respondent refused to answer. The above effects, therefore, are the responses of the remaining 79 respondents.

[b]The specific effects comprising these general categories are indicated in Appendix Tables 2A through 2E.

Appendix Table 2A: Perceived Economic Effects Resulting from the Development of the Kaiparowits Plateau--Kanab Respondents

Specific Economic Effects	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
General Progress, Growth Prosperity	41	-	-	-
Increased Retail Sales	12	-	-	-
Change in Personal Standard of Living	8	3	-	-
Increase in Tax Revenues	25	-	-	-
Increase in Tourism	2	-	-	-
Increased Property Values	2	1	-	-
Other Economic Effects[a]	-	2	-	-
Total	90	6	-	-

[a]This category includes boom-bust economy, industrial and business monopolies, excessive local economic expectations, and adverse effects upon existing businesses.

Appendix Table 2B: Perceived Employment Effects Resulting from the Development of the Kaiparowits Plateau--Kanab Respondents

Specific Employment Effects	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
Increased Permanent Employment	39	-	-	-
Creation of Job Training Program	1	-	-	-
Employment Will Go to Outsiders	-	-	-	-
Other Employment Concerns[a]	-	2	-	-
Total	40	2	-	-

[a]This category includes increased temporary employment, increased unionization, and effects upon respondent's present job.

Appendix Table 2C: Perceived Social Effects Resulting from the Development of the Kaiparowits Plateau--Kanab Respondents

Specific Social Effects	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
Population Increase	23	14	7	-
Change in Availability or Number of Community Services	21	8	-	-
Change in Local Social Problems	-	4	-	-
Change in Rate of Out-Migration	10	-	-	-
Change from Rural to Urban Orientation (Less Isolated)	4	1	-	-
Other Social Effects	1	-	-	-
Total	59	27	7	-

Appendix Table 2D: Perceived Environmental Effects Resulting from the Development of the Kaiparowits Plateau--Kanab Respondents

Specific Environmental Effects	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
Increased Air or Water Pollution	-	4	1	-
Pollution Will Be Controlled	1	-	-	-
Change in Use of Water Supplies	1	1	-	-
Change in Land Use	1	-	-	-
Other Environmental Effects[a]	-	1	-	-
Total	3	6	1	-

[a]This category includes climatic changes.

Appendix Table 2E: Perceived Miscellaneous Effects Resulting from the Development of the Kaiparowits Plateau--Kanab Respondents

Specific Miscellaneous Effects	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
Effects on Political Structure	1	5	-	1
Effects on Native Americans	-	-	-	-
More Energy Will Be Available	14	-	1	-
Resources or Money Will All Flow Out of Area	-	3	-	-
New Town Will Be Created	11	4	2	-
Other Effects[a]	-	-	-	-
Total	26	12	3	1

[a]This category includes safety hazards and serendipitous discoveries (e.g., water).

Appendix Table 3: Perceived Effects Resulting from the Development of the Kaiparowits Plateau[a]--Blanding Respondents

Type of Effect[b]	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
Economic	31	-	-	2
Employment	30	1	-	-
Social	11	8	1	1
Environmental	2	15	-	-
Miscellaneous	21	40	-	-
Total	95	64	1	3

[a]Fifteen respondents reported that they had never heard of the Kaiparowits project, 17 reported that they did not know what the effects would be, and 1 refused to answer. The above effects, therefore, are the responses of the remaining 46 respondents.

[b]The specific effects comprising these general categories are indicated in Appendix Table 3A through 3E.

Appendix Table 3A: Perceived Economic Effects Resulting from the Development of the Kaiparowits Plateau--Blanding Respondents

Specific Economic Effects	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
General Progress, Growth Prosperity	18	-	-	1
Increased Retail Sales	2	-	-	-
Change in Personal Standard of Living	3	-	-	-
Increase in Tax Revenues	4	-	-	1
Increase in Tourism	3	-	-	-
Increased Property Values	1	-	-	-
Other Economic Effects[a]	-	-	-	-
Total	31	-	-	2

[a]This category includes boom-bust economy, industrial and business monopolies, excessive local economic expectations, and adverse effects upon existing businesses.

Appendix Table 3B: Perceived Employment Effects Resulting from the Development of the Kaiparowits Plateau--Blanding Respondents

Specific Employment Effects	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
Increased Permanent Employment	28	-	-	-
Creation of Job Training Program	-	-	-	-
Employment Will Go to Outsiders	-	1	-	-
Other Employment Concerns[a]	2	-	-	-
Total	30	1	-	-

[a]This category includes increased temporary employment, increased unionization, and effects upon respondent's present job.

Appendix Table 3C: Perceived Social Effects Resulting from the Development of the Kaiparowits Plateau--Blanding Respondents

Specific Social Effects	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
Population Increase	4	5	1	1
Change in Availability or Number of Community Services	3	1	-	-
Change in Local Social Problems	-	-	-	-
Change in Rate of Out-Migration	1	-	-	-
Change from Rural to Urban Orientation (Less Isolated)	3	2	-	-
Other Social Effects	-	-	-	-
Total	11	8	1	1

Appendix Table 3D: Perceived Environmental Effects Resulting from the Development of the Kaiparowits Plateau--Blanding Respondents

Specific Environmental Effects	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
Increased Air or Water Pollution	-	12	-	-
Pollution Will Be Controlled	2	-	-	-
Change in Use of Water Supplies	-	-	-	-
Change in Land Use	-	3	-	-
Other Environmental Effects[a]	-	-	-	-
Total	2	15	-	-

[a]This category includes climatic changes.

Appendix Table 3E: Perceived Miscellaneous Effects Resulting from the Development of the Kaiparowits Plateau--Blanding Respondents

Specific Miscellaneous Effects	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
Effects on Political Structure	-	2	-	-
Effects on Native Americans	8	0	-	-
More Energy Will Be Available	10	1	-	-
Resources or Money Will All Flow Out of Area	-	5	-	-
New Town Will Be Created	3	1	-	-
Other Effects[a]	-	1	-	-
Total	21	10	-	-

[a]This category includes safety hazards and serendipitous discoveries (e.g., water).

Appendix Table 4: Perceived Effects Resulting from the Development of the Kaiparowits Plateau[a]--Monticello Respondents

Type of Effect[b]	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
Economic	44	2	2	-
Employment	23	1	-	-
Social	12	8	3	-
Environmental	3	29	3	-
Miscellaneous	21	11	2	-
Total	103	51	10	-

[a]Eleven respondents reported that they had never heard of the Kaiparowits project, 15 reported that they did not know what the effects would be. The above effects, therefore, are the responses of the remaining 54 respondents.

[b]The specific effects comprising these general categories are indicated in Appendix Tables 4A through 4E.

Appendix Table 4A: Perceived Economic Effects Resulting from the Development of the Kaiparowits Plateau--Monticello Respondents

Specific Economic Effects	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
General Progress, Growth Prosperity	25	-	1	-
Increased Retail Sales	4	-	-	-
Change in Personal Standard of Living	2	-	-	-
Increase in Tax Revenues	12	-	-	-
Increase in Tourism	1	-	-	-
Increased Property Values	-	-	-	-
Other Economic Effects[a]	-	2	1	-
Total	44	2	2	-

[a]This category includes boom-bust economy, industrial and business monopolies, excessive local economic expectations, and adverse effects upon existing businesses.

Appendix Table 4B: Perceived Employment Effects Resulting from the Development of the Kaiparowits Plateau--Monticello Respondents

Specific Employment Effects	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
Increased Permanent Employment	22	-	-	-
Creation of Job Training Program	-	-	-	-
Employment Will Go to Outsiders	1	1	-	-
Other Employment Concerns[a]	-	-	-	-
Total	23	1	-	-

[a]This category includes increased temporary employment, increased unionization, and effects upon respondent's present job.

Appendix Table 4C: Perceived Social Effects Resulting from the Development of the Kaiparowits Plateau--Monticello Respondents

Specific Social Effects	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
Population Increase	4	1	2	-
Change in Availability or Number of Community Services	-	4	-	-
Change in Local Social Problems	1	-	-	-
Change in Rate of Out-Migration	-	-	-	-
Change from Rural to Urban Orientation (Less Isolated)	7	3	1	-
Other Social Effects	-	-	-	-
Total	12	8	3	-

Appendix Table 4D: Perceived Environmental Effects Resulting from the Development of the Kaiparowits Plateau--Monticello Respondents

Specific Environmental Effects	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
Increased Air or Water Pollution	1	22	3	-
Pollution Will Be Controlled	1	-	-	-
Change in Use of Water Supplies	-	-	-	-
Change in Land Use	1	6	-	-
Other Environmental Effects[a]	-	1	-	-
Total	3	29	3	-

[a]This category includes climatic changes.

Appendix Table 4E: Perceived Miscellaneous Effects Resulting from the Development of the Kaiparowits Plateau--Monticello Respondents

Specific Miscellaneous Effects	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
Effects on Political Structure	-	-	-	-
Effects on Native Americans	3	-	-	-
More Energy Will Be Available	12	3	-	-
Resources or Money Will All Flow Out of Area	-	8	1	-
New Town Will Be Created	6	-	1	-
Other Effects[a]	-	-	-	-
Total	21	11	2	-

[a]This category includes safety hazards and serendipitous discoveries (e.g., water).

Appendix Table 5: Perceived Effects Resulting from the Development of the Kaiparowits Plateau[a]--Escalante Respondents

Type of Effect[b]	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
Economic	81	12	3	-
Employment	63	3	1	-
Social	144	40	26	-
Environmental	5	6	-	-
Miscellaneous	8	8	-	-
Total	301	69	30	-

[a]One respondent reported that he did not know what the effects would be. The above effects, therefore, are the responses of the remaining 95 respondents.

[b]The specific effects comprising these general categories are indicated in Appendix Tables 5A through 5E.

Appendix Table 5A: Perceived Economic Effects Resulting from the Development of the Kaiparowits Plateau--Escalante Respondents

Specific Economic Effects	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
General Progress, Growth Prosperity	20	-	1	-
Increased Retail Sales	26	2	1	-
Change in Personal Standard of Living	13	2	-	-
Increase in Tax Revenues	13	-	-	-
Increase in Tourism	3	-	-	-
Increased Property Values	5	5	1	-
Other Economic Effects[a]	-	3	-	-
Total	80	12	3	-

[a]This category includes boom-bust economy, industrial and business monopolies, excessive local economic expectations, and adverse effects upon existing businesses.

Appendix Table 5B: Perceived Employment Effects Resulting from the Development of the Kaiparowits Plateau--Escalante Respondents

Specific Employment Effects	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
Increased Permanent Employment	62	-	1	-
Creation of Job Training Program	1	-	-	-
Employment Will Go to Outsiders	-	3	-	-
Other Employment Concerns[a]	-	-	-	-
Total	63	3	1	-

[a]This category includes increased temporary employment, increased unionization, and effects upon respondent's present job.

Appendix Table 5C: Perceived Social Effects Resulting from the Development of the Kaiparowits Plateau--Escalante Respondents

Specific Social Effects	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
Population Increase	53	18	20	-
Change in Availability or Number of Community Services	49	7	4	-
Change in Local Social Problems	-	14	-	-
Change in Rate of Out-Migration	24	1	1	-
Change from Rural to Urban Orientation (Less Isolated)	18	-	1	-
Other Social Effects	-	-	-	-
Total	144	40	26	-

Appendix Table 5D: Perceived Environmental Effects Resulting from the Development of the Kaiparowits Plateau--Escalante Respondents

Specific Environmental Effects	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
Increased Air or Water Pollution	1	3	-	-
Pollution Will Be Controlled	-	-	-	-
Change in Use of Water Supplies	1	1	-	-
Change in Land Use	3	2	-	-
Other Environmental Effects[a]	-	-	-	-
	—	—	—	—
Total	5	6	-	-

[a]This category includes climatic changes.

Appendix Table 5E: Perceived Miscellaneous Effects Resulting from the Development of the Kaiparowits Plateau--Escalante Respondents

Specific Miscellaneous Effects	Respondents' Assessments of the Effect			
	Positive	Negative	Neutral or Ambivalent	No Response
Effects on Political Structure	2	8	-	-
Effects on Native Americans	-	-	-	-
More Energy Will Be Available	5	-	-	-
Resources or Money Will All Flow Out of Area	1	-	-	-
New Town Will Be Created	-	-	-	-
Other Effects[a]	-	-	-	-
Total	8	8	-	-

[a]This category includes safety hazards and serendipitous discoveries (e.g., water).

THE AUTHOR

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