

ECOTOURISM IN THE RUSSIAN FAR EAST: A FEASIBILITY STUDY



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LIST OF ACRONYMS AND TERMS

GIS	Geographic Information System
GOSPROMKHOZ	State game hunting company (currently being privatized) that rents land for game hunting, logging, timber processing and secondary forest products harvesting
IRR	Internal Rate of Return
LESKHOZ	State forest service in charge of managing and protecting forest land
LESPROMKHOZ	State-owned institution (currently being privatized) responsible for logging and timber processing
NGO	Non-Governmental Organization
NPV	Net Present Value
NRM	Natural Resources Management
RFE	Russian Far East
TOR	Term of Reference
USAID	United States Agency for International Development
USSR	Union of Soviet Socialist Republics
<i>zakaznik</i>	State wildlife reserve
<i>zapovednik</i>	State nature reserve

EXECUTIVE SUMMARY

OVERVIEW

This preliminary feasibility study on ecotourism in the Russian Far East was carried out by a team of four consultants from April 10 through May 4, 1995. The team traveled throughout the region visiting the following sites:

<i>Site</i>	<i>Territory (Krai)</i>
Kedrovaya Pad	Primorski Krai
Morskoj Reserve	Primorski Krai
Sikhote-Alin Reserve	Primorski Krai
Village of Melnidchuoye	Primorski Krai
Lazovski Reserve	Primorski Krai
Bolshekhetskiski Reserve	Khabarovski Krai
Khor River Basin	Khabarovski Krai

Approximately 45-50 interviews were carried out to obtain the necessary data on which the analysis was based. Sample itineraries within these areas were developed for which financial analyses were carried out.

The purpose of the study was to document the economics of ecotourism in the Russian Far East (RFE): does it make economic sense to invest in tourism infrastructure and launch a marketing program to attract tourists to the region for the purpose of increasing incomes for the protected areas as well as for the local communities? To this end, the team developed an analytical model designed to assess the "bankability" of ecotourism based on assumed investment and operating cost levels, the carrying capacities of the sites, and the occupancy rates of the facilities. The model was used to break down the tourist dollar progressively to identify the amounts remaining in-country and, more importantly, on the sites. These on-site tourism expenditures for lodging, meals, guide and interpretation services, transportation, and charitable donations, etc., comprise the benefits attributable to the investments.

Laarman and Durst (1991) define ecotourism as a non-consumptive use of wildlands that generates employment and a higher level of economic well-being for host communities. In addition, it increases foreign exchange earnings, expands the service sectors in the region, provides high quality experiences for the visitors, and attracts investment capital.

Lindberg (1991) estimated that, in 1988, some \$55 billion were spent by tourists worldwide, of which ecotourism's share was somewhere between \$2 and \$12 billion. Since then, the ecotourism market has grown substantially, largely as a result of increased media attention to nature-oriented travel which has led to the creation of improved infrastructure on the sites and, hence, to increased visitation (Laarman and Durst, 1991). Moreover, as the discontent with "sun and surf" mass tourism at conventional destinations increases, there seems to be increased satisfaction of pursuing new learning experiences rather than manmade entertainment (Kusler 1990).

While in the field, the study team solicited definitions of ecotourism from all individuals interviewed to obtain a Russian perception of what the term means. The answers consistently indicated the following:

- Ecotourism is non-consumptive use of natural resources with a strong emphasis on science and education.

- Hunting and fishing were almost unanimously excluded from the definitions since they imply taking something away, even catch and release fishing
- Ecotourism includes activities typically associated with adventure tourism, such as river rafting, mountaineering and caving

The definition of ecotourism applied in this study largely reflects the answers given ecotourism is non-consumptive use of wildlands including catch and release fishing, river rafting and photo safaris as occasional ancillary activities

Adopting this definition has implications, however To the purist, tourists setting foot in a zapovednik will cause irreparable damages to the behavior patterns of wildlife To the less than pure, closely controlled tourism can generate much needed income to an area and be instrumental in providing additional funding for the continued protection of the natural resources that comprise the tourist attractions in the first place To the "not at all pure" opportunists, largely uncontrolled tourism may perhaps mean high short term profits, but largely at the expense of severe degradation of the resource base, particularly with respect to wildlife behavior—"tourism destroys tourism" Ecotourism, however defined, therefore, can only be a subset of a continuum ranging from mass tourism to closely controlled ecotourism Once the allowable activities are defined, they fit on the tourism continuum somewhere to the left of the purist notion of tourism impact (which is no tourism and no activities) This, in effect, means that *a commitment to build and promote a well-conceived and controlled ecotourism program in the RFE also entails acceptance of some environmental degradation, however small it may be, using the purist position as a reference point* In this respect, any ecotourism proposal will encounter criticism from both sides of the continuum (being either too pure or not pure enough) once the analysis is anchored to a specific set of assumptions that invariably defines some point on the continuum

The costs were estimated on the basis of determining the minimum infrastructure needed to accommodate up to 12 tourists at one time per site in reasonable comfort The 12 tourists times 365 days per year translates into a maximum carrying capacity per site of 4,380 bed nights per year Although not scientifically determined, this maximum level was assumed to not exceed the ecological carrying capacity of the area

The results of the analysis indicate that ecotourism should, all else being equal, be an attractive development option in the RFE Based on an assumed occupancy rate of only 20 percent, the investments would generate an internal rate of return of over 24 percent and a positive net present value Increasing the occupancy rate, of course, would dramatically increase the returns The results also showed that ecotourism would, given the assumptions, generate nearly \$465,000 of additional income to the local communities assuming a multiplier factor of three, i.e. each dollar spent on tourism on the sites would generate an additional three dollars of benefits The employment effect would be equally attractive as tourism would generate an average of 8.4 of full-time equivalent (FTE) years of employment per year on each site

The major caveat to the study at this point is the lack of marketing information The area certainly is well endowed with spectacular scenery, mountains and beaches Tourists, however, will not be attracted to the RFE for these reasons because there are many other sites in the world where scenic beauty attractions equal or surpass those available in the RFE These countries also have decades (if not centuries) of tourism experience and well-developed infrastructure The main attractions in the RFE are the wildlife, or more appropriately, the Amur tiger, the Amur leopard, the Siberian crane, the Himalayan black bear, and the existence of the unique system of zapovedniki These threatened and endangered species are very much the focus of concern for major international conservation organizations such as the National Geographic Society and others Because of the existence of such species and the zapovednik wilderness areas, ecotourism, with an objective of promoting the conservation of these resources, would appear to be the

most logical form of tourism to develop in the region. The tourism market, therefore, would be limited largely to the scientific and adventure communities—those who are not adverse to physical rigor and minimal creature comforts in pursuing unique tourism experiences.

Despite the increasing international and national pressures to save the tigers (which, if successful, would also preserve the habitat for many other threatened flora and fauna species), it is quite obvious that success can only be achieved if local communities in the impact areas are provided with alternative economic incentives. This could include direct economic compensation for not poaching tigers (an unlikely alternative), increased logging and mineral extraction, and/or ecotourism. Logging inside protected reserves (zapovedniki) would, of course, not be an option. Outside the reserves, however, land use conflicts abound. The problem with which this study is concerned is the absence of viable economic opportunities in the local communities in or near tiger and/or leopard habitat areas. The study, therefore, seeks to document the potential economic impacts of ecotourism both inside and outside protected areas as an income and employment generator from the perspectives of (i) local communities, (ii) the investors, and (iii) the international tour operator. The ultimate beneficiaries, of course, must be the tourists themselves who must receive value at least equal to the price they pay for the recreational experiences.

It is important that local communities clearly understand that ecotourism is an entirely different concept than mass tourism. The attractions—why people may choose to visit the RFE—must be preserved on a sustainable basis, which means that the rate of visitation to the areas must be carefully controlled. This also means that local communities will have to agree to forego possible short-term economic gains brought about as a result of mass tourism in favor of long-term sustainable economic gains, albeit smaller.

The problem is best understood in the context of carrying capacity. Determining and controlling carrying capacity are very important factors in planning ecotourism projects or programs. The long-term sustainability of the resource base hinges on the ability and willingness of the resource owner to *limit* the number of visitor days over a given time period to a number that will accommodate the ecological and cultural integrity of the site. It is to the ecological carrying capacity of a site *to which infrastructure and other investments should be calibrated*. This means that only up to X tourists per day (a low number) at one site will have little impact on the wildlife population in the area provided that trails and observation posts etc. are well designed and do not disturb animal feeding or migratory habits. On the other end of the spectrum, Y tourists per day (a higher number) may indeed have a severe impact on the wildlife in the area. It is in this sense that the phrase "tourism kills tourism" is true. Whereas the short-run profitability of catering to Y tourists per day may be substantial, the long run prospects are bleak because tourism overcrowding will effectively destroy the very attractions that made ecotourism in the area possible in the first place.

However, despite the focus on hearty individuals, able to cope with rustic accommodations, many improvements to the current situation in the RFE would make the area more viable. Improvements in the area of living facilities, interpretive facilities, interpretive materials, and transportation, among others, would make the RFE ecotourism experience more acceptable to most people. This is especially important when considering that word-of-mouth is an important way ecotourists gain clients, a positive experience can beget numerous additional clients in the future.

CONCLUSIONS AND RECOMMENDATIONS

Continued protection of unique and fragile flora and fauna resources in the protected areas in Primorski and Khabarovski territories is in jeopardy, largely because of inadequate funding. Moreover, there are pressures to expand logging activities into proposed new areas considered for protection, areas that would ensure corridor migration for threatened and endangered wildlife species, such as the Amur tiger. Ecotourism is perceived by many as, at least partially, having the potential to solve these problems.

Based on this current situation and the results of the study presented in this report, the major conclusions drawn and recommendations made are as follows

Conclusion 1

Investments Despite the favorable results obtained in the preliminary financial analysis, the conclusion is drawn that highly capitalized investments should be avoided at this time. The RFE has a long way to go and much to learn about tourism before capital intensive projects are undertaken. This conclusion is also supported by the fact that funding of ecotourism development through the local banks are, at best, bleak under the present economic conditions. Any investment funding must come from the international donor organizations and/or the NGO conservation community and focus on relatively minor improvements, many of which can make a major difference in user satisfaction.

Recommendations for Conclusion 1

Funding sources EPT should help identify suitable funding sources for the development of rustic level (but meeting minimal creature comfort standards) tourist accommodations.

Second phase of ecotourism study As a follow-up to this study, EPT should consider funding a market study for the kinds of ecotourism experiences envisioned in this study. This will allow a closer estimation of the kinds of investments needed, how soon, and where.

Conclusion 2

Policy The current policy environment in the RFE with respect to launching a sustainable ecotourism program is woefully inadequate. The major public sector revenue generator from tourism in other countries is entrance fees into national parks or protected areas. In the reserves, there is only occasional mention of entrance fees, usually in the form of charitable donations which may or may not benefit the reserves in the end. Such donations are never specific, or mentioned explicitly, but are usually "buried" in the daily fees quoted by the site operators along with meals, lodging, transportation and guidance services.

Recommendations for Conclusion 2

Entrance fees EPT should consider funding Russian consultants to prepare a study on feasibility of instituting a fairly standardized system of entrance fees into reserves and parks (all protected areas) for Russian and foreign visitors. The study should make recommendations with respect to the assurance that a major portion of the entrance fees, once the system is instituted, will flow back to reserves instead of to the National Treasury.

National parks With respect to national park planning in the Region, EPT should (under Component 3) consider preparing a position paper concerning potential for abuse (tourism development "pirates") without proper planning, safeguards and training.

Conclusion 3

Training Training in all topics relevant to tourism and at all levels must be considered a top priority. Given the current dismal economic situation in the region, the unstable political situation, and the increasing crime rates, ecotourism will fail unless it becomes an island of efficiency and productivity in this unpredictable environment. Becoming an island of efficiency requires training in all areas relevant to tourism and at all levels.

Recommendations for Conclusion 3

Inbound tour suppliers EPT should consider funding a 2 to 3-week training course for 10 to 15 existing or potential inbound tour suppliers. Topics should include (i) minimal tourist requirements for creature comforts, (ii) financial accountability and management, (iii) international and domestic marketing, (iv) how to develop working relationships with tourism site operators, and (v) economics training with strong emphasis on feasibility analysis. Of these, basic accounting and marketing skills are paramount to the success of any tourism program.

Guide training One of the most important contributions to successful ecotourism is the use of professional, knowledgeable, and personable guides. Although scientists are available on site at many reserves in the RFE, true interpretive personnel are lacking. EPT should consider supporting short seminars on nature guiding and translating materials from English to Russian so that they are more generally available.

Souvenirs and handicrafts EPT should consider funding a 2 to 3-week training course on souvenir and handicrafts promotion and production at the local level. A major potential revenue source from tourism is the sale of locally manufactured souvenirs such as tiger paw plaster casts, cedar cones, post cards, painted objects, etc. Neither the reserves nor the villages near the reserves have given much thought to the development of such small-scale industries.

Conclusion 4

Ecotourism definition Some confusion reigns with respect to the definition of ecotourism and the economic implications of adhering to a specific definition. Some perceive ecotourism as an economic panacea and have visions of unlimited numbers of tourists coming to enjoy the beautiful nature and scenery in the RFE. Others are (correctly) adamant in severely limiting tourism visits in the *zapovedniki* (state nature reserves), but say little about limiting tourism outside the *zapovedniki*, in the buffer zones, the national parks and in the *zakazniki* (state wildlife reserves). The conclusion drawn on the basis of this study is that ecotourism must be clearly defined in terms of the ecological carrying capacity both inside and outside the *zapovedniki*. Too many tourists will easily degrade, and may ultimately destroy, the fragile resources in the region including the wildlife resources, the existence of which is the very reason why ecotourism is still a development option today.

Recommendations for Conclusion 4

Ecological tourism carrying capacity EPT should consider funding a team of experts (probably among those attached to the *zapovedniki*) to prepare estimates of the ecological tourism carrying capacity inside and outside the *zapovedniki*. The objective should be to determine the optimal balance between allowing some resource degradation to occur (changed animal behavior as a result of increased human contact) in exchange for different levels of economic gains. The team of scientists should include economists.

Policy reform Based on the result of this effort, EPT should initiate the process of policy reform to ensure that the tourism carrying capacity, as determined, will be respected. This is very important in view of the fact that most investors would, all else being equal, opt to invest where the returns are highest, i.e. in infrastructure that can attract the most visitors and generate the highest possible revenues. With ecotourism, as defined with a view to protecting the resources on which the viability of ecotourism rests in the first place, the emphasis must be long term and the number of visitors must be closely calibrated to the carrying capacity of the sites.

SECTION 1 INTRODUCTION

1.1 BACKGROUND

The USAID-funded Russian Far East (RFE) Sustainable Natural Resource Management Project is a three-year effort intended to promote sustainable, multiple-use natural resource management in the Khabarovsk and Primorski territories of the RFE. The three related components of the project are

- To build an *institutional framework for sustainable natural resource management*
- To promote environmentally *sustainable forest management*
- To promote *biodiversity conservation management* including the protection of endangered species and critical habitat in the Sikhote-Alin Mountain region

The third component—biodiversity conservation management—is the primary focus of this study. As stated in the project work plan for Delivery Order #11 (1995)

Krai strategies for the protection of biodiversity will be based on criteria developed to protect the ecological integrity of functioning ecosystems, sustainable genetic exchange among subpopulations of endangered flora and fauna, and areas of high biodiversity, high endemism, and roadless conditions. These values need to be protected in the upper Bikin as well as by key additions to the Lazo and Sikhote-Alin Zapovedniks and by creating new national parks adjacent to zapovedniks.

Ecotourism is perceived as an effective means to accomplish this as well as an economically attractive development option. The purpose of this study is to document the potential economic attractiveness of ecotourism in the RFE in a way that can be directly compared with the economic attractiveness of alternative development options.

The study team consisting of Dr. K. Christophersen (IRG, Team Leader), Ms. Lubov P. Khabotneva (Sikhote-Alin Reserve), and Mr. Steven Levin (IRG) traveled for three and a half weeks throughout the RFE (April 10-May 4, 1995) to collect data and carry out the preliminary analyses. The fourth member of the team, Dr. Howard Quigley of the Hornocker Wildlife Research Institute, did not participate in the field work as he has traveled and worked extensively in the region as the Director of the Siberian Tiger Project, located in the Sikhote-Alin Reserve. Sample tour itineraries within these areas were developed for which financial analyses were carried out.

1.2 ECOTOURISM

Laarman and Durst (1991) define ecotourism as a non-consumptive use of wildlands that generates employment and a higher level of economic well-being for host communities. In addition, it increases foreign exchange earnings, expands the service sectors in the region, provides high quality experiences for the visitors, and attracts investment capital.

Lindberg (1991) estimated that, in 1988, some \$55 billion were spent by tourists worldwide, of which ecotourism's share was somewhere between \$2 and \$12 billion. Since then, the ecotourism market has grown substantially, largely as a result of increased media attention to nature-oriented travel which has led to the creation of improved infrastructure on the sites and, hence, to increased visitation (Laarman and Durst, 1991). Moreover, as the discontent with "sun and surf" mass tourism at conventional destinations

increases, there seems to be increased satisfaction of pursuing new learning experiences rather than manmade entertainment (Kusler 1990)

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The definition of ecotourism applied in this study largely reflects the answers given: ecotourism is non-consumptive use of wildlands including catch and release fishing, river rafting, and photo safaris as occasional ancillary activities.

Adopting this definition has implications, however. To the purist, tourists setting foot in a zapovednik will cause irreparable damages to the behavior patterns of wildlife. To the less than pure, closely controlled tourism can generate much needed income to an area and be instrumental in providing additional funding for the continued protection of the natural resources that comprise the tourist attractions in the first place. To the "not at all pure" opportunists, largely uncontrolled tourism may perhaps mean high short term profits, but largely at the expense of severe degradation of the resource base, particularly with respect to wildlife behavior—"tourism destroys tourism." Ecotourism, however defined, therefore, can only be a subset of a continuum ranging from mass tourism to closely controlled ecotourism. Once the allowable activities are defined, they fit on the tourism continuum somewhere to the left of the purist notion of tourism impact (which is no tourism and no activities). This, in effect, means that *a commitment to build and promote a well-conceived and controlled ecotourism program in the RFE also entails acceptance of some environmental degradation, however small it may be, using the purist position as a reference point*. In this respect, any ecotourism proposal will encounter criticism from both sides of the continuum (being either too pure or not pure enough) once the analysis is anchored to a specific set of assumptions that invariably defines some point on the continuum.

1.3 THE PROBLEM

The basic problem is simple to understand but complex to resolve. Whereas the natural resource and biodiversity values in need of protection in the RFE are the major focus of international and national organizations, such are not necessarily the local concerns. From the international perspective, there is a very high priority to protect the remaining tiny population of some 200 Amur tigers. In addition, the Amur leopard (one of the most endangered big cats) is also found in the southern portion of the region. The Himalayan black bear and cranes are also on the list of endangered species. Only few leopards, black bears, and cranes remain in the wild. These charismatic endangered species have brought, and will continue to bring, great attention to the RFE. Media attention and coverage in the United States has come in the form of such high-visibility forums as the New York Times and National Geographic Magazine, in addition to news coverage on major networks.

But the issue is more than high visibility cats or birds. The same region that harbors these species also harbors the highest degree of species diversity in Russia and contains a high degree of species endemism of both flora and fauna. The issues surrounding the conservation of this great biological diversity are only

recently beginning to generate activities to secure this heritage. Support for these efforts is also growing stronger nationally through a non-governmental organization (NGO) community dedicated to environmental protection.

In many local communities, however, the concerns are of a different nature. There, the focus is more on economic survival than on biodiversity protection. The communities are typically plagued by high unemployment rates as sawmills and other economic activities have shut down after the collapse of the Soviet Union, and there are few long term prospects for any significant improvements. As a result, economic activity has reverted to traditional means of survival such as hunting and gathering. Hunting concessions are issued to local community residents who hunt game to feed their families and the communities. The presence of predators (tigers) on their concessions has a significant two-fold impact on the local way of life. *First*, there is a high international demand for tiger products such as the skin, bones, teeth and offals, which are used for a variety of medicinal purposes. This demand is a potent incentive to poach tigers despite increasing control and efforts to protect them. *Second*, the incidence of tigers on any hunting concession can impact the availability of game in the area. The more abundant the tiger population in any given area, the less game may be available for hunting, hence another strong incentive to poach tigers.

Despite the increasing international and national pressures to save the tigers (which, if successful, would also preserve the habitat for many other threatened flora and fauna species), it is quite obvious that success can only be achieved if local communities in the impact areas are provided with alternative economic incentives. This could include direct economic compensation for not poaching tigers (an unlikely alternative), increased logging and mineral extraction, and/or ecotourism. Logging inside protected reserves (zapovedniki) would, of course, not be an option. Outside the reserves, however, land use conflicts abound. The problem with which this study is concerned is the absence of viable economic opportunities in the local communities in or near tiger and/or leopard habitat areas. The study, therefore, seeks to document the potential economic impacts of ecotourism both inside and outside protected areas as an income and employment generator from the perspectives of (i) local communities, (ii) the investors, and (iii) the international tour operator. The ultimate beneficiaries, of course, must be the tourists themselves who must receive value at least equal to the price they pay for the recreational experiences.

1.4 KEY ISSUES

The principal components in the development of realistic biological diversity conservation strategies for the RFE are inexorably tied to economics and diversification of development in the region. Successful strategies must incorporate long-term, economically viable alternatives for both extractive and non-extractive uses of natural resources. Ecotourism—although commonly not an answer in itself to the economic support of non-extractive areas—can provide significant financial production from natural resources in non-consumptive land-use areas. In addition, some of the attractions which draw ecotourism and make it successful can be tied to resource utilization areas where extractive practices (such as logging) take place. Two key issues in biodiversity conservation in the RFE related to ecotourism are the endangered species and economic diversification, as briefly discussed below.

1.4.1 Endangered Wildlife Species and *Zapovedniki*

Why would tourists choose to come to the RFE? Certainly, the area is endowed with stunning natural beauty with ample opportunities for “regular” tourism activities. Clean and attractive beaches can be found and developed for the “sun and surf” tourists, river rafters will find many attractive stretches of river to float, and fishermen and hunters will find ample opportunity to pursue their favored recreational activities. But many other countries are equally well endowed with spectacular physical attractions, perhaps even more so than the RFE. Hence, at least on this basis, there is strong, perhaps insurmountable competition.

from other countries where the attractions are much better known and the tourism infrastructure is already well developed and smoothly functioning. In Russia, no such infrastructure exists, nor are the physical attractions known, and one would have to start at the very beginning. There certainly is little assurance in the RFE that "if you build it, they will come."

What then, are the attractions? It is the judgment of the study team that the attractions consist of the existence of certain rare and endangered wildlife species in great need of conservation and the existence of the zapovedniki, rich in flora and fauna (see Section 2) which are fast running out of money. Although the conservation of biodiversity in a broad sense is of great concern in natural resource planning, the avoidance of species extinction must also be a focus. This is especially true when conflicts exist between the persistence of a species and the development of natural resources. In the RFE, there are currently more than 100 vertebrate species which are considered rare, threatened, or endangered (not including fish). However, the legal mechanisms by which those species are protected are vague and weak. Nonetheless, as the development of natural resources progresses in the region, impact analyses and mitigation must take place to preserve the natural heritage of the region.

The four species (or groups of species) of special concern are the Amur (or Siberian) tiger, the Amur leopard, the Himalayan black bear, and the Siberian white-naped and Japanese cranes as briefly discussed above. There are a number of reasons to focus on these species. They are certainly not *more* important than other endangered species in the sense of zoological philosophy, all species are considered of equal importance in the overall scheme of things. But from a practical standpoint, they have value as focal species for endangered species conservation planning. First, they are naturally rare on the landscape anyway, they do not occur in high densities. Thus, their total numbers—even in a large region like this—will be low, and any loss can be considered of some significance. Secondly, by focusing on these species, many other species will be conserved at the same time due to the so-called "umbrella effect" or "coattail effect" (Soule 1985). Lastly, because of the great attention these species seem to draw from people, especially in the case of the tiger, their extinction will be viewed with despair by many in Russia and the world community. This sort of attention is certainly not relished by anyone in this era. However, what are normally seen as conflicts between the conservation of these four species and the development of natural resources may in fact be unfounded.

For the black bear, the leopard, the tiger, and the cranes there are a number of reasons to be optimistic about their future, even in the light of resource development in the RFE. Aside from the problem of poaching, the concerns for these species center generally around the feeling that they are strongly tied to old growth forests, or at least dependent on forested ecosystems, and that alteration of the system will lead to a negative impact. This is not necessarily the case. Although all the pertinent data are not fully analyzed at this time (Miquelle et al 1994, Miquelle, Quigley & Hornocker unpubl. data), there is reason to believe that forest practices could assist in improving the habitat for at least the tiger and the black bear. For instance, one of the most important prey for tigers appears to be the Manchurian elk. We know that North American elk (the same species as the Manchurian elk) are aided by certain types of clear-cut practices. Specifically, patches of less than 15 acres, spaced far enough apart, can create a habitat collage which is beneficial to elk populations. In the same manner, black bear habitat in North America is generally improved with certain levels of canopy removal. These openings create growth and release in understory plants which aid in summer food production for the species. These same dynamics may be at work in the case of the Himalayan black bear.

Ecotourism can provide strong economic incentives for the conservation of endangered species. Whereas tourism to the RFE is relatively new, marketing, inquiries from interested parties, and informal surveys indicate that the Amur tiger is of particular importance to potential tourists to the region. The potential income from tourists traveling to the area to either see tigers or tiger habitat, and learn first-hand about the situation could be a significant incentive for the conservation of this cat. In addition, the diversity of bird life in the RFE is as high or higher than most Eurasian sites of similar latitude. Birding groups will

be attracted to the area not only for the great diversity, but also for the few primary focal species, the cranes. These include the Siberian, white-naped, and Japanese cranes which can be viewed seasonally in the Lake Khanka area and the Ussuri River basin.

It must be recognized that the focus on the threatened and endangered wildlife species (as well as the rich flora available in the region) as the tourism drawing card greatly limits the numbers of tourists that will come. This, in turn, does not warrant the construction of 5-star hotels, nor the creation of expensive accommodations at or near the zapovednik. Instead, the likely tourism candidates will be those primarily interested in the flora and fauna (the scientific community including botanists, ornithologists, wildlife experts, geologists, and the like), and those not adverse to austere living conditions (little or no physical creature comforts and considerable physical rigor associated with the tourist experiences). The area will, therefore, attract not only the pure scientists, but also physically active participants who would be willing to endure some physical discomfort in exchange for unique, physically demanding, and adventurous experiences (see Laarman's—1987—matrix of “hard/soft” distinctions of tourism).

1 4 2 Economic Diversification

Economic diversification through tourism is perceived as a desirable means to generate much-needed income in local communities where land use conflicts are often the rule rather than the exception (Cebellos-Lascourain, H and A J T Johnsingh, 1995). The actual and potential for such conflicts outside the protected areas (logging and/or minerals extraction versus the protection of wildlife habitat) is real indeed, and tourism may provide, at least, a partial solution. If tourism is a real possibility, there should be active participation of the local community in setting the tourism agenda (identifying the attractions, local community involvement in terms of employment and income generation, development of souvenir and handicraft production, etc.). In the past, much of the concern related to tourism development has focused on the needs of the tourist. While this is still a concern, there is a strong and growing recognition that a greater balance needs to be struck in weighing the desires of visitors against the well-being of their hosts. There is a growing concern that tourism must benefit the local community and there must be broad-based participation in tourism development at the community level.

Boo (1990) carried out one of the most comprehensive studies on ecotourism, arguing both its merits and pitfalls. While nature tourism helps diversify the economy and stimulates local employment, it may not be nearly by as much as one is often led to expect. The largest portion of the economic benefits accrue to individuals and organizations outside the host country (international airfares, outbound tour operators, and the like), as also demonstrated in this study. Moreover, the effect on local employment may be mitigated by the fact that tourism is highly seasonal. Boo points out that the economic impacts may also be modest because of the fact that ecotourism proposals must be planned with strict adherence to tourism carrying capacity requirements based on scientific studies of the environmental impacts of tourism.

The relatively small percentage of the tourism dollar left in the host country, and even the smaller percentages left at the field sites, still merit analysis, however. Even when only four or five percent of the total amounts spent by the tourists actually benefit the field sites directly, these amounts quickly add up to real benefits in the long run as long as the tourists come, particularly when each dollar spent at the field sites will be subject to a multiplier effect in the local communities if supplies (food, gasoline, other services) are procured locally. A multiplier effect of three (or higher) is not uncommon, meaning that each dollar spent will generate three dollars of direct economic benefit in the community.

1 5 APPROACH

The analytical approach taken here is not the well-established and often used methods of determining recreational values, such as the travel cost method (Clawson and Knetsch, 1966),¹ or the contingent valuation method (see Mitchell and Carson, 1989, and Cummings et al, 1986)² The approach taken in this study is to analyze the *potential* for ecotourism in the RFE assuming that the region harbors potential tourism attractions that can effectively compete with other tours offered in the international ecotourism market. The study provides estimates of the costs of creating tourism infrastructure and employment in both the private and public sectors, and the revenues earned from an assumed number of visitors to the sites per year. The estimates are derived on the basis of carefully developed tourism packages including the investments needed to accommodate tourists on the field sites in relative comfort. The approach is to select at least two field sites (the current version of the model can accommodate three) that can be reached by road, railroad, or air from the two RFE gateway arrival cities (Vladivostok and Khabarovsk), assess the natural and cultural characteristics of the surrounding area, estimate the investments needed to upgrade existing facilities to the point where tourists are comfortably accommodated, and assess the tourist attractions in the area. Once the analyses have been completed for these sites, other potential tours to different sites can be just as easily analyzed to determine an overall impact of ecotourism to the RFE on a much wider scale.

1 5 1 The Perspectives

The perspectives for whom the analyses are carried out include three must-be winners in the provision of tourism infrastructure and services:

- The *inbound tour supplier* who will collaborate with the outbound tour operator and provide all in-country logistics and arrangements
- The *public sector* who will provide tourism infrastructure, park rangers, trails and upkeep of the resource base
- The *outbound tour operator* whose tours will have to be profitable. The business of the tour operator is to sell tourist packages which must show profits if he is to remain in business in the long run.

The ultimate winner must, of course, be the *tourists* for whom the experiences must be sufficiently worthwhile to generate return visits or free advertising among friends and acquaintances. The results of this study will show the conditions under which these goals are attained.

Perhaps the most important element in a successful program is the establishment of a strong partnership between the private and public sectors. In the RFE this element must be carefully developed and nurtured because the concept is still unknown. It should be quite obvious that both the private and public sectors must work closely together as partners to realize tourism as well as conservation targets. A site will not attract tourists if it is not adequately maintained, funded and controlled or if access is not provided through the public sector. Likewise, tourists will not visit the site unless the private sector provides the necessary

1 This method estimates the value of a recreational area on the basis of tourists paying different prices for the same recreational experience because they are traveling from different points of origin. This process yields a demand function and thus an estimate of consumer surplus—the difference between what tourists actually pay and what they would be willing to pay.

2 The contingent valuation method consists of surveys in which sample populations are asked hypothetical questions to determine how much people would be *willing to pay* for the preservation and maintenance of certain areas or wildlife species.

infrastructure to cater to the needs of the tourist such as (low-impact) lodges and other infrastructure. Both partners must uphold their ends of the (tacit) partnership agreement.

In Russia today, however, there continues to be little emphasis placed on developing and enabling the private sector to carry out functions that, to western societies, are obvious private sector responsibilities. These include "winning and dining" and lodging tourists. In the zapovedniki these are still government functions (see Section 2)—there is no partnership. This study recognizes that public/private sector partnerships are the exception rather than the rule and recommends that this be reversed if ecotourism efforts are to succeed and/or local communities are to prosper and grow in the long run. Transferring certain functions over to the private sector will greatly benefit tourists, the economies of local communities and the participating private sector entities, as well as the public sector. The latter will then be able to focus more intently on the care and maintenance of the reserves themselves—responsibilities that should rightfully remain in the public sector.

1.5.2 Elements of the Analytical Model

An analytical model spreadsheet model (Lotus 123r4) was developed for purposes of this study. The model is sufficiently generic to be applicable to any tour package and/or field site one may want to analyze (other than the ones analyzed in this report). The input assumptions and results of the model are presented in tabular format.

Beginning with the total cost of the tour package, paid to the tour operator, the model progressively breaks out how the tourist dollars are spent by major categories: (i) the *outbound tour operator* who collects the money from the tourists and pays for international airfares and all expenses before departure from the gateway city, (ii) the outbound operator also negotiates a contract with the *inbound tour supplier* who will organize and cover all costs for activities in-country in the gateway arrival and departure cities and on all sites. Also included are tour company profit margins. Of particular interest to the investment analysis is how much is spent at the field sites since this represents the amounts available for recurrent costs funding (or the returns on investments made at the field sites).

Next, the investments needed on each site are estimated. They include upgrading existing, or building new lodging infrastructure on the sites and improve sanitary conditions to be able to accommodate tourists and in temporary facilities for camping such as tents. Also relevant to the investor is building tourist visitor centers, nature museums, wildlife rehabilitation centers, creation and maintenance of hiking trails, and the training of labor (rangers, guides, interpreters, laborers and other staff, etc.). Investments will vary between sites since some sites are better endowed with available infrastructure than others.

Costs and benefits (as estimated above) are then aggregated in accordance with occupancy rate assumptions and brought together in a cost/benefit analysis to generate net present values (NPV) and internal rates of return (IRR) associated with the investments made.³ These results will be directly comparable to results obtained from alternative investment opportunities such as mineral extraction and/or intensified logging in the region. The last step is estimation and analysis of the income and employment impact in the local communities as a result of the project.

3 The criteria for feasibility are that the NPV is equal to or is greater than 0 and that the IRR is equal to or greater than the opportunity cost of capital. The opportunity cost of capital can be defined as the rate of return investors can reasonably expect from a composite of similar investment opportunities associated with the same risk level.

1 5 3 Limitations

There are three major limitations to the analytical approach ⁴

Marketing Throughout the world today there are many areas where ecotourism can flourish provided that appropriate investments are made in infrastructure, site improvements and long term maintenance of the attractions. New sites, of course, must compete with the old and well established ones. Some African countries (Kenya is perhaps the best example) have a long history of successfully catering to tourists through aggressive marketing. This study does not determine the market potential for ecotourism in the RFE. Instead, the analysis is firmly rooted in assumptions on how many visitors the sites will be able to accommodate and an assumed occupancy rate. Once the tourist attractions are well identified and judged competitive, the marketing, although time consuming and costly, becomes a fairly mechanical task of advertising the tour capitalizing on its uniqueness vis-a-vis alternative ecotourism packages to other countries.

Quantifiable vs non-quantifiable information The missing ingredient in the literature on ecotourism is a focus on the "bottom line" question: does ecotourism pay? Sherman and Dixon (1990) addresses this question largely from the perspective of the many benefits of preserving an area that are not counted/measured in most analyses, such as watershed protection, flood control, biodiversity benefits, etc. The analysis presented here does not directly address such non-quantifiable (or too difficult or too time consuming to quantify) aspects of ecotourism. Instead, its focus is on the *bankability* of ecotourism from the perspectives of the potential investors, i.e. the direct cash inflows and outflows over time. A bankable project based on the quantifiable costs and benefits only may not need any further bolstering with elaborate analyses of the non-quantifiable benefits and costs. This must, of course, not be interpreted to mean that non-quantifiable benefits and costs are unimportant. They are, indeed, very important and may in fact, comprise the most important reasons why ecotourism should be seriously considered. Before these values are realized, however, the direct investments must be made and be compared with the direct benefits earned as a result. If the direct benefits exceed direct costs, given the assumptions, then the project is bankable (feasible), and the values too costly or too time consuming to quantify will be realized anyway, without having to count on them in order to justify the investments made. All such values should, of course, be identified and discussed qualitatively in the text.

Economic and political stability Russia is currently undergoing fundamental economic changes which cause enormous economic hardships to large segments of the population, along with rapidly increasing crime. The banks are not approachable to finance private sector activities such as the development of ecotourism infrastructure. The current tax system is overwhelmingly detrimental to any legal economic development in the private sector. The exchange rate between the ruble and the dollar is highly volatile, sometimes fluctuating by as much as 25 percent in one day. The use of major credit cards and traveler checks in the RFE is still very limited and tourists are obliged to carry large amounts of cash. As such, international tourists may be easy prey to robbers and con-artists.

The economic problems are, to a large extent, a function of an inadequate and inefficient political system following the collapse of the Soviet Union. These current realities, of course, cannot continue forever, lest the country ceases to be viable. It must be assumed that (i) the current economic hardships will eventually bottom out and gradually improve, (ii) inflation will settle down to some comprehensible number, (iii) the banking system will open its doors to the private sector and make financing of feasible projects competitive and available, (iv) the current tax system will be replaced, (v) the political system will eventually be infused with checks and balances to greatly decrease the opportunities for graft and

⁴ The first two limitations are taken from Christophersen et al. (1992) for the ecotourism study carried out for Africa in 1992 (for which the original version of the analytical model was developed).

corruption and bureaucratic inefficiencies. The analysis presented in this report are based on certain assumptions that would be unrealistic under the current turmoil. In the long run, however, they are intended to reflect economic realities as they should and must be when the major economic variables have settled down. One such economic reality that must emerge, of course, is political stability. If the demand for tourism suddenly drops for political instability reasons, the investments made by the private and public sectors alike are lost as tourism simply stops. The private sector will not invest in tourism developments if the tourists are not coming. Only countries with a reputation of being politically calm, devoid of ethnic strife, having a stable currency and is rich in potential nature tourism attractions will attract the attention of private sector tourism developers in the long run.

1 6 CONTENTS OF THE REPORT

The report has an Executive Summary, six sections and five annexes. The Executive Summary contains a summary of the approach taken and rationale for the study, the results obtained, and all conclusions and recommendations. Section 1 contains the background, statement of the problem and approach to the study. Section 2 provides a general overview of the resource base and outlines the proposed tour package to be analyzed in detail. The breakdown of the tourist dollar and analysis of the tour package from the tour operator perspective are presented in Section 3. The tourist carrying capacity of the sites and aggregation from individual tours to tourist numbers on an annual basis and the associated economic implications are discussed in Section 4. Section 5 addresses the investment requirements and determines the financial feasibility of the investments made. Section 6 estimates the income and employment impacts of the ecotourism effort in local communities. The detailed terms-of-reference (TOR) is provided in Annex A. The individuals and institutions contacted and interviewed in the process of carrying out the TOR are given in Annex B. Comparative tour package costs (for ecotourism excursions in other countries) are provided in Annex C. A listing of current protected areas in the Primorski and Khabarovski territories is provided in Annex D. Annex E provides itineraries for two possible tours in addition to the one analyzed in the text.

SECTION 2 RESOURCE ASSESSMENT

2.1 INTRODUCTION

"Russia is a world in itself, but one which is at last opening its doors wide. The more the outsider travels through it, the more he is overwhelmed by the country's scale and contrasts: the number of different peoples and cultures, climates and ecosystems and the wide range of fauna and flora, including tiger, leopard, Japanese and Siberian cranes, and ginseng of the monsoon forest" (Volunteer Executive Service Team, 1994)

There are presently a number of pressures which threaten the ecological integrity of natural systems in the RFE. Intensive cutting of forests, farming and industrial growth decreasing habitat, fragmenting what is left of that habitat, and increasing human access to it. These activities and characteristics result not only in the creation of more critical situations for endangered wildlife, such as tigers and cranes, but lower the vitality and productivity of the natural system as a whole. Disintegration of the USSR, economic problems throughout Russia, current low esteem of the scientific community, poor wages for staff, paucity of enforcement, and poaching have created a critical situation. Consequently, the RFE and its endangered wildlife have been the focus of much concern throughout the world.

A number of approaches to resource conservation in the above conditions exist. Two critical elements in such approaches are resource planning and the development of non-consumptive resource use, both of which are addressed in the biodiversity component of the current EPT/RFE program. Ecotourism has become an important motivation for resource conservation in many parts of the world, however, it is little developed in the RFE and the potential for resource conservation in the area is unknown.

Several characteristics are currently juxtaposed in the RFE which lead one to conclude that a high potential for ecotourism exists thus making assessment of that potential of great importance. Those characteristics include but are not limited to the following: (i) the existence of a rich biological diversity in the region, with the highest number of species anywhere in eastern Russia, for example, more than 300 species of birds have been recorded for several points in the region, (ii) several high-profile, charismatic species are present in the region, including the Siberian tiger, Japanese and white-naped cranes, and the Amur leopard, (iii) there is an anticipated worldwide growth in, and demand for, ecotourism product (see Section 1.2), (iv) reserve and park staff who are generally well-educated in natural history and species identification, (v) there is a tremendous economic need in protected areas and surrounding communities alternative sources of support due to severe reductions in support from the central government, and (vi) there is increasing interest in the area worldwide.

2.2 GENERAL OVERVIEW

Of fundamental importance, and difficulty, in tourism analysis is the clear definition of the resource base. The definition process is obfuscated when applied to ecotourism, for it cannot be equated with "mass" tourism due to a much more narrow-even fringe-definition in comparison to more mainstream tourism.

The RFE possesses a host of important biological, historical, cultural and natural settings. From an aesthetic point of view, the nature of the RFE is world class. But when compared to other areas in the world rich in biodiversity, would its nature, alone, prove attractive to the ecotourist? In essence, why should anyone interested in ecology, the diversity of nature, the conservation of nature, and the viewing and experiencing of such want to come to the RFE? Can the RFE ecotour experience compete as an

attraction on the world market? To answer the above questions, the study will analyze three primary variables critical in the region's ability to compete in the world market features, price, and infrastructure

2 2 1 Features

With respect to special features, the subject area is endowed with many attractions. As stated in Section 1, the study emphasizes those features unique to the RFE (i) the region's endangered species (i.e. the tiger, the leopard, cranes, etc.), (ii) its natural areas which have been structured for ecological education, habitat protection, and resource protection (see discussion of zapovednik, zakaznik, national parks below), and (iii) its rich culture and people. Superficially, on the basis of its features alone, the RFE, indeed, may be able to compete in the world market for ecotourist dollars. However, some additional notes and comparisons are necessary.

In reference to the above three features and their ability to compete with other attractions around the world, several characteristics are of note and mentioned here as cautions when comparing the RFE to other areas and as a method of focusing on specific needs in the development of ecotourism in the region.

First, in the emphasis on wildlife attractions in the area, particularly rare cats and birds, it is important to note that viewing opportunities are seasonally limited with respect to birds, and essentially non-existent with respect to the cats. In some of the most popular wildlife-oriented ecotourism destinations, such as the Serengeti plains of Africa (for terrestrial mammals) and the Gulf of California in Mexico (for whales), the object(s) of the tours are visible almost daily during peak months. Siberian tigers and Amur leopards of the RFE are another matter entirely. Their secretive nature makes them nearly impossible to see. This does not necessarily make a visit to leopard and tiger country unappealing, but, in order to assure success, it does require certain support systems not necessary at the above-mentioned sites. For instance, reserves in India and Nepal draw tens of thousands of people annually, as does the Cockscomb Reserve in Belize, despite the fact that tigers and jaguars, respectively, cannot be viewed "on demand" at these sites. Support materials must be developed and planned properly to enhance the experience of visiting the "realm of the Siberian tiger," for instance.

Second, and intimately connected to the first point, is the fact that tourism has not been a significant emphasis or economic factor in natural areas of the RFE. Outside of the metropolitan areas of Vladivostok and Khabarovsk, there are literally no experienced and trained guides for tourism. And, there are no facilities to which tour groups can go to view interpretive displays or obtain written material. Although rural residents and reserve personnel are very knowledgeable and even scientifically trained in aspects of the natural history of the region, presentation skills and materials fall far short of other world destinations for wildlife.

Lastly, as is the case in other world destinations for ecotourism, the cultural aspects of the region are of some importance. The importance of the cultural dynamics will also be an attractive part of any ecotourism experience in the area. The cultural history of the region is a dynamic interaction of people from the Asian cultures of China, Korea and Japan, to the indigenous people, to the Russians who eventually controlled the region. Currently, there are few support materials for historical interpretation in the area.

2 2 2 Price

In the second phase, price must be considered. Is the tour product financially competitive with like experiences in other areas in the world? To determine the feasibility of a "typical" RFE ecotour program, an examination of ecotour product to areas throughout the world would need to be considered (see Annex C—Comparative Tour Packages). Emphasis was placed on comparable (eco)tour product (i.e. wildlife, etc.), trip duration, and total costs (including airfare from a US gateway city). Average costs of \$3,950

and trip duration of 15 days were noted. A "typical" RFE ecotour itinerary was created to include the above-mentioned features, and priced accordingly—a 15-day duration based on an average group size of 10, and a total trip package cost of \$3,950.

Consideration was given to sites (i) which have had experience in ecotourism (ecological education in particular), (ii) where the personnel have had a degree of training in ecotourism management, and (iii) whose facilities are sufficiently large to accommodate a group of 10 ecotourists (see also Section 2.3).

2.2.3 Infrastructure: Russia's System of Protected Areas

"Russia, along with the other nations of the former Soviet Union, has long recognized the importance of protecting its biodiversity. Thus today, Russia possesses one of, if not the largest and most diverse systems of nature reserves in the world. These reserves constitute approximately 40 percent of the world's strict scientific reserves, and occupy more than one percent of the former Soviet Union. They, also, serve as the base for a strong network of world-class scientific research and ecological monitoring. In the past decade, Russia also has created national parks. In addition, the country has over 1,500 smaller special purpose reserves or *zakazniki*, as well as 29 natural monuments. Taken together, these protected areas, and the biodiversity protected therein, represent an extraordinary planetary resource" (Grigoriew et al., 1993).

The discussion of infrastructure should include, but not be limited to land, improvement costs, and operating costs. Of these, the most important is the land or the probable ecotourism sites, the focus of concern in this section (the remainder of this study will address the other infrastructure questions in detail).

Zapovedniki

The *zapovednik* (state nature reserve) serves as the backbone of Russia's Protected Nature System. These areas have been set up for the purpose of conducting fundamental research and population studies. Many specialize in specific research on endangered species, rare minerals, and/or plants (i.e. Siberian tiger, cranes, leopards, etc.). Human activity is highly restricted in these reserves, established and administered by the Federal government. Within the *zapovednik's* boundaries, the administration is the legal entity with title to the land. A typical staff ranges in size from about 30 to 80 full-time employees, including administrators, rangers, and scientists. Defined objectives of the *zapovedniki* include:

- Biodiversity conservation, i.e. protection of wildlands, habitats for rare wildlife, and the flora and fauna of natural ecosystems
- Scientific research of natural ecosystems
- Environmental training of conservation professionals
- Public education
- Issuing environmental impact statements on development projects

Almost all *zapovedniki* are owned and overseen by the Ministry of Ecology. Recently a few *zapovedniki*, which traditionally were managed by the Russian Academy of Sciences or by the Ministry of Higher Education of the Russian Federation, are now jointly managed with the Ministry of Ecology (*Russian Conservation News*, October 1994). Their fundamental activities are not taxable as long as they are grounded in ecological education.

Due to the relatively low impact of ecotourism, particularly with respect to minimal infrastructure development vis-a-vis regular tourism, and the grounding in ecological education as a major *zapovednik* function, ecotourism with a weighted emphasis on environmental (ecological) education would seem an ideal partner for these institutions. In addition, the *zapovedniki* are well-suited to ecotourism because the goals are similar.

Zakazniki

Originating as game preserves, zakazniki (wildlife preserves) protect wildlands, valuable natural areas, or particular species of plants and wildlife. The status accorded to the zakaznik differs from that of the zapovednik, principally in the level of restrictions on natural resource use. Some zakazniki allow limited economic activities such as logging, hunting or berry picking during prescribed seasons.

Many types of zakazniki may be categorized, such as ecosystems (conserving vulnerable and rare communities), zoological (protecting habitat of a particularly valuable animal species, or a population of such species), botanical (focusing on conservation of population of rare plants, or plant communities), geological, and others.

Because they can be created more quickly and easily than zapovedniki, zakazniki have become the most widespread form of protected areas, and constitute the majority of the protected areas in the regions which have been settled for long. In many cases, rapid designation of a zakaznik may save a valuable area which later may be converted into a national park or zapovednik” (Russian Conservation News, Oct 1994)

Since zakazniki can be created at both the federal or regional levels, and since their management may be carried out jointly by the private and public sectors, they could provide ecotourists with high quality experiences, while benefiting the region. Currently, many zakazniki in the RFE region have been abandoned by under-budgeted governments. In some of the study sites, efforts are being made to utilize ecotourism cashflow to help protect important habitat areas.

National Parks

In the system of Russian protected areas, national parks play an important role in preventing exploitation of valuable and comparatively large tracts of lands that have traditionally been used for recreation and cannot or need not be completely prohibited from human use. They are intended to meet the following objectives:

- Protection of natural complexes and their associated objects of cultural heritage
- Public access to undeveloped or partly developed land for hiking, camping, skiing and other recreational pursuits in designated areas
- Environmental and conservation education
- Elaboration and introduction of scientifically-based approaches for protecting natural and cultural heritage

National parks, established by the federal and regional authorities, are administered by the Division of National Parks (part of the Federal Forest Service). Usually, direct authority over national parks is delegated to regional departments of the Forest Service. Park administrators manage their territories through divisions of science, recreation, forest protection and law enforcement independently, or sometimes in cooperation with local authorities (Russian Conservation News, Oct 94)

Although the process of establishing a national park on the surface seems simple, without proper planning, training, management and controls, seemingly good intentions may go awry. Without safeguards” the settled portions of National Parks can grow to become a preoccupation of management at the expense of biodiversity protection. Consideration to limits of growth for those settlements and other specific policies which must address the limits of influence on the objective of protection, are considered a perceived need” (Grigoriev et al, 1993)

Many in the RFE (including environmentalists) believe that national parks and ecotourism are compatible due to the application of multi-use concepts in national parks. A cautionary note is important here. There

is indeed a real possibility that, without limits on development, generating short-term and immediate economic benefits may be favored through developments for mass tourism at the expense of careful and well-planned efforts designed to safeguard the resource base. Mass tourism is not consistent with a high quality ecotourist experience. Nonetheless, the theory behind the concept is sound. Ecotourism and well-planned national parks should be mutually beneficial, as long as there are safeguards which protect everyone's interest.

Natural Monuments

Natural monuments include natural objects of special interest such as rock formations, champion trees, bird rookeries, or scenic landscapes. Although existing legislation imposes no restrictions on the size of natural monuments, typically they are relatively small (100 m² to 500 hectares) and thus usually cannot provide adequate degree of ecosystem protection. Like the zakaznik, the creation of a natural monument may provide benefits to a regional administration, while at the same time providing the ecotourist with a high quality experience.

Local authorities often favor the establishment of natural monuments over zakaznik because use may be less restricted and because they may have some aesthetic importance to the community. In some cases, when the creation of zakaznik is not politically possible, natural monuments can be created to perform a zakaznik's function" (Russian Conservation News, Oct. 94).

Nature Parks

Nature parks consist of areas of ecological and aesthetic value. The designation is a new category of land protection and usage (by Federal Decree Feb. 95). Land is to be used for nature protection, education, and recreation. Nature parks are promoted by the Russian Federation and at the local level. They are, when formed, managed by non-commercial organizations (public) that can raise funds through publications, humanitarian means, and donations.

In addition to their intended nature conservation role, nature parks also serve as recreation areas. They seemingly could support large scale development as long as they achieve an ecological balance between recreation and nature protection. It remains questionable as to whether nature parks are compatible with the low impact concept of ecotourism. Because the concept is new, time will be the arbiter.

2.3 THE TOUR PACKAGE

Before presenting the tour package (analyzed in detail in subsequent sections), some cautionary notes are in order (itineraries for other tours are presented in Annex E). Many sites within the RFE are removed from population centers, where travel conditions are difficult at best. Travelers often experience long delays due to weather and/or equipment failure. Travel to certain areas during the year may be impossible. Worse still, the hyper-inflation in the country has made travel relatively expensive. Traffic in city areas, just as it is in the rest of the world is congested. Travelers must be warned of the likelihood of delays and cancellations. The most reliable and comfortable form of travel is the railroad. It should be noted that spring and early summer months, travelers should be aware that ticks abound and cases of tick-borne encephalitis have been reported. According to certain US Health Travel Services, the tick is related to those found in Austria and certain European countries. A preventive vaccine is available, but not readily so in the US. Travelers would be well-advised to consult with their local doctors.

The "sample" itinerary produced below and analyzed throughout is adapted from an actual ecotourism itinerary. It is presented as an example of promotional materials and descriptions which would be received by those interested in an ecotour experience in the RFE. The reader is advised to note *that the site analysis could take into account an unlimited combination of natural sites and cultural experiences*.

throughout the RFE study area By no means should the referenced example be considered definitive What is important is that the analytical process is replicable for any combinations of sites potential tour operators and supplier may wish to consider

2 3 1 Background

"Explore the wonders of *The Nature of Russia and Her Nature Reserve System* and learn, firsthand, about the field studies being conducted by Russian & American researchers of the Siberian Tiger Project at its primary research site at The Sikhote-Alin Biosphere Nature Reserve "

Cost \$3,950 per person from Seattle, Washington, inclusive of airfare, US and Russian accommodations

Accommodations Hotels (double occupancy with single supplements available in Seattle), bunkhouses, cabins and/or tents

Maximum Group Size 10 participants The group will be traveling to remote locations with minimal to non-existent tourism infrastructure and can expect few creature comforts and unexpected adventure

The nature reserves (zapovedniki) and facilities chosen for this trip presently accommodate small numbers of people Primitive by western standards, accommodations may include bunkhouses, homestays, or tenting In a very real sense this trip marks one of the first opportunities westerners will have to travel to the RFE and her bountiful nature reserves It is in this light that members are encouraged to participate as "ambassadors" for this very special even

The tour begins in Vladivostok (meaning "Hold the East"), which will serve as the base of operations The group will visit two important nature reserves (zapovedniki), where the Tiger Project is conducting fundamental research on two regal members of the cat family, the Amur leopard and the Siberian tiger

The major focus will be on the Sikhote-Alin Reserve, the habitat, the animals, and, most important, the people who strive to protect these endangered species Historically closed to the general public, this reserve serves as a research center for habitat study And, for the first time, expedition members will have the opportunity to learn about the work being done to save these majestic animals and others

Siberian Tiger Project field teams have tracked and radio-collared tigers for information on general movement, habitat use, and predatory-prey behavior Additionally, the project has captured and radio-collared brown bears, endangered Himalayan black bears and Amur leopards It is the interaction of these species with the tiger as well as the additional information on other endangered species that will be the focus

Participants, next, will head south from Vladivostok to the Kedrovaya Pad Nature Reserve Though the reserve is only 70 square miles in area and lies a few miles from the North Korean and Chinese borders, here the forest takes on a subtropical character It is in this area that the Amur leopard is confined It is thought that only two dozen or so Amur leopards have survived extinction

The Siberian Tiger Project conducts research at the zapovednik on both the tiger and leopard During the summer of 1993, two leopards known to inhabit the Reserve were captured, a radio collar placed around their necks, and released The female has been named, "Svyeta," roughly translated into English as "Daylight "

Expedition members will have the opportunity to explore the city of Vladivostok and pay particular attention to the nature within this "once closed" military port and cultural center of the RFE The stay will include discussions with representatives of environmental organizations The group will learn, firsthand,

that with new-found freedoms, new-found problems have surfaced which threaten Russia's unique Nature Reserve System and its ecology

The Seasons

Weather conditions and temperatures may vary greatly in the RFE and tourists should be well prepared for both cold and hot weather. It is usually hot in many inland areas during the summer months with temperatures reaching 40 degrees C. Many escape to the warm rivers and cool forests. On the coast, however, cooler temperatures prevail.

Fall is characterized by sunny days with cool temperatures (10-15 degrees C). The taiga (forest) is filled with a cornucopia of color. It is harvesting time and people are busy canning, pickling, and picking wild berries and mushrooms in the woods, preparing for the long winter months. Hiking is a popular activity during this season. October would mark the beginning of theater, ballet, and concert seasons.

Winter frosts (to -35 degrees C) are strong in Khabarovsk Krai, and stiff western winds (with -25 degrees C) in the Primorski Krai make the air "bone-chilling." There is much snow, cross-country skiing, skating and hockey on lakes & rivers. Many prefer skiing or snow shoeing in the woods, along snowy trails. Winter is also an important time for community and cultural activities.

Spring time is characterized by wide swings in temperatures, and the emergence of the insect population, particularly the forest ticks. It is also a special time of bird migration and when Siberian & Japanese Cranes make their way home.

Area Characteristics

Bounded on the east by the Sea of Japan and on the west by China and North Korea, where the Amur and Ussuri Rivers flow, the great Siberian boreal forest, the "taiga," almost magically blends into a northern monsoon forest, teeming with exotic birds, plants and unfamiliar animals. Here where North meets South, the mixed forest is a veritable cornucopia of biological diversity. It is a region known as "Ussuriland" and where the fight to save the Siberian tiger, the Amur leopard, the Siberian and Japanese cranes, and the Blackston owl from extinction, is being waged.

Ussuriland is of great interest to all lovers of nature. Its flora and fauna are extremely diverse. In summer and autumn the taiga is in full regalia. Over 1,500 plant species grow in the Far Eastern region, many endemic and rare. Broad-leaved and coniferous forests surprise the hiker with unusual combinations of color. Lemon liana, Korean pine, tender pink Rhododendron Forest, "juicy" (native slang) meadows filled with bright blue, yellow, orange and red flowers.

The Amur-Sakhalin bioregion serves as the last stronghold for the Siberian (Amur) tiger and the far east leopard. These species serve as the two main predators within the realm of the Ussuriland ecosystem, whose disappearance would alter the densities of all flora and fauna in the area.

Ussuriland was gained from China in 1860 and extended the Russian empire, giving her strategic waterways, and the foundation of a naval port on the Pacific. The region is home to native peoples, such as the Udegy, Ulchi and Nanai, who, traditionally, have lived off "Nature's bounty" and whose simple way of life, today, is threatened.

To the north, landscapes are dominated by birch, spruce and pine. The south takes on a more subtropical look with its magnolia vines, scarlet champions, peonies, lilies and orchids adorning the summer landscape. The forest contains a mixture of conifers, as well as deciduous oak, maples and ash. However, it is the great Korean pines with their enormous cones, which dominate the region, provide sustenance to the

nutcrackers, squirrels, wild boar and deer, and play such an important role balancing economic needs with nature

These areas possess a fragile ecosystem that with the downfall of Communism and in the wake of new found freedoms, have been threatened. Much of the wildlife is rare, or even endangered. Besieged by rampant poaching, destruction of habitat and cutbacks in funding, the Nature Reserves (Zapovedniki) of the RFE are the beleaguered homes to the Siberian tiger, the far east leopards, the Siberian crane, and the Blackston owl

2 3 2 Tour Itinerary

Day 01 - Arrival Seattle, Washington

Arrival and transfer to local accommodations. Evening briefing for all participants. Dinner is at leisure.

Day 02 - Depart Seattle for Vladivostok, Russia

Day 03 - Arrive Vladivostok, Russia

After crossing the International Dateline flight arrives in Vladivostok in late afternoon. Overnight in local hotel.

Day 04 - Morning flight to Plastoon, drive to Sikhote-Alin Biosphere Nature Reserve (Ternei, Russia)

For the next six days the group will be the guests of The Sikhote-Alin Biosphere Nature Reserve (Zapovednik), the primary research site of the Siberian Tiger Project. During the stay the group will have the opportunity to meet with Russian and American researchers and field biologists. The primary focus will be the Siberian tiger, its habitat, and the current efforts to save the tiger from extinction. Though the chances of seeing a tiger (particularly in the dense summer forest) is slight, everyone, most certainly, will be able to follow in the tracks of this wondrous, solitary animal, known locally as, "The Master". Particular emphasis will be placed on relating the ecosystem to the tiger's survival. The group will study the area's flora and fauna, current problems, and the issues relevant to the survival of Russia's unique system of scientific nature reserves, zakazniki, natural monuments and national parks. The Sikhote-Alin Biosphere Reserve will also provide the group with a rare opportunity to explore the area, searching for signs of its rich wildlife including sika deer, elk, wild boar, goral (a rare mountain goat), seals, and a wide variety of exotic birds.

Day 05 - At Sikhote-Alin Biosphere Nature Reserve

The group will drive to a prime tiger habitat. Guided by a Siberian Tiger Project team member, the expedition will see tiger "marking trees"—a sign for the rest of the world that man is the intruder to the tiger's home.

Day 06 - At Sikhote-Alin Biosphere Nature Reserve

The group will spend the day with an ungulate specialist in an area, considered prime hunting ground for the tiger.

Day 07 - At Sikhote-Alin Biosphere Nature Reserve

The group will visit a Goral (rare type of mountain goat) zakaznik where photo opportunities abound.

Day 08 - At Sikhote-Alin Biosphere Nature Reserve

The focus of the trip moves to the seal and to a seal's rookery where the expedition will be guided by a field researcher of the Zapovednik. Birds will be plentiful. During the evening a special performance by the local Ternei chorus will fill the air with harmony and bright Russian musical sounds.

Day 09 - At Sikhote-Alin Biosphere Nature Reserve

The final full day at the Reserve will be spent in the forest, learning about the area's rare plants and, ultimately, relating the forest to the tiger.

Day 10 - Morning flight to Vladivostok, transfer to Kedrovaya Pad Nature Reserve

The focus shifts to the Siberian Tiger Project's other Russian research site in the extreme south of Ussuriland. Occupying 70 square miles, the Nature Reserve at "Kedrovaya Pad" was created in 1916 and is the one of oldest nature reserves in Russia. Kedrovaya Pad serves as a haven for both the Siberian tiger and the Amur leopard. The forests, climate, and geology, reflect a rare mixture of plant and animal life of the Arctic with those of subtropical areas. Our stay over the next few days will allow us to learn about the problems and efforts to protect the area's endangered animal species and rare plant life (i.e. Ginseng). The group will track collared animals, hike to areas where gold mining was once conducted and which, today, serve as a natural habitat for the Amur leopard, the Siberian tiger, and Black bear, and view magnificent video footage of the leopard and tiger. Afternoon orientation and evening slide show with one of RFE's finest wildlife biologists.

Day 11 - At Kedrovaya Pad

A day long hike along a monsoon forest trail to an *izbushka* (cabin) near the Chinese border. Here the expedition will learn to track and identify the leopard whose presence within the boundaries of this reserve can be sensed.

Day 12 - At Kedrovaya Pad

The day is spent in search of more signs of the leopard and exploring an area of ginseng—a treasured medicinal plant. The evening will be filled with a video presentation of the filming of a leopard documentary for NHK TV - Japan.

Day 13 - At Kedrovaya Pad

A morning journey to the remains of a former working gold mine will take the group through more leopard habitat.

Day 14 - PM transfer to Vladivostok (general sightseeing)

Vladivostok has been referred to as the San Francisco of the Russian Far East. During the stay everyone will have the opportunity to explore this port city, which until 1992 was closed to all foreigners. Expedition members may visit the local museums, city markets and harbor which is the important far east base for the Russian naval fleet.

Day 15 - In Vladivostok (general sightseeing), farewell dinner at a local restaurant

Day 16 - Return to the United States

SECTION 3 BREAKDOWN OF THE TOURIST DOLLAR

3 1 INTRODUCTION

The breakdown of the tourist dollar into component parts is essential in order to determine the amount of money spent as the tour progresses, and most importantly, at the field sites. By far the largest component is the amount tourists pay to the tour company for the entire package. Each tourist pays a lump sum in exchange for a complete package tour to the RFE, everything included (transportation, meals, lodging, guides, interpreters, etc.) The other smaller, but still significant, component is the amount of money not included in the tour package, spent for souvenirs and handicrafts and donations and the like by each tourist while in country. Together, these two components comprise the upper limit of the pool of money available for recurrent cost financing of the field sites and their infrastructure. The purpose of the analysis in this section is to progressively isolate the expenditures made by tourists on the field sites from the two sources.

3 2 TOTAL COST OF THE TOUR PACKAGE

The following base case assumptions reflect the total costs of a 2-week long tour to the RFE as described in the previous section, including all cost variables in a package typically offered by a tour operator: (i) outbound operator costs, (ii) outbound operator contract with the inbound tour supplier to cover in-country (RFE) costs, and (iii) outbound and inbound tour operator profit margins. The cost assumptions also reflect a tour package considered to be well within the competitive range of recreational experiences available in many other countries (see Annex C). Table 3.1 provides a summary of how the portion of the tourist dollar handled through and by the outbound tour operator is broken down per tourist and per group, including percentage allocations for each cost category.

Table 3.1 Breakdown of the Tourist Dollar

Variables	Assumptions	TC/Tourist	TC/Group	%
Season	May 15 to June 15, 31 days July 15 to 10 October, 87 days			
Tourists/group	10			
International airfare	Alaska Airline	\$1,140	\$12,540	37.1%
Outbound tour guide salary	One accompanying guide	\$10/tourist/day	\$1,500	4.4%
Gateway Domestic				
Lodging	Day 1 (one night)	\$50	\$550	1.6%
Gateway Arrival	Days 2-3			
Salary inbound supplier guide	One inbound supplier guide	\$4/tourist/day	\$600	1.8%
Lodging	One night	\$50/night	\$550	1.6%
Meals	3 meals/day	\$20/day	\$220	0.7%
Transportation	Transport from gateway to site 1	\$220/tourist	\$2,420	7.2%
Interpreter (arrive and depart)	3 days tot gateway arrive/depart	\$5.00/tourist/day	\$165	0.5%
Site 1	Days 4-9			
Lodging	6 nights	\$20/night	\$1,320	3.9%
Meals	3 meals/day	\$15/day	\$990	2.9%
Transportation on site 1	Transport on site 1	\$5/day/tourist	\$330	1.0%
Fees/charitable donations	Entrance fees	\$15/day/tourist	\$990	2.9%
Scientist guides	1 guide/day @ \$30	\$3/day/tourist	\$198	0.6%
Interpreters	1 interpreter/day @ \$20	\$2/day/tourist	\$152	0.4%

Variables	Assumptions	TC/Tourist	TC/Group	%
Site 2				
Lodging	Days 10-13 4 nights	\$20/night	\$1 320	2 6%
Meals	3 meals/day	\$15/day	\$990	2 0%
Transp (from site 1 + on site 2)	Transport from site 1 & on site 2	\$12 50/day/tourist	\$550	1 6%
Fees/charitable donations	Entrance fees	\$15/day/tourist	\$990	2 0%
Scientist guides	1 guide/day @\$30	\$3/day/tourist	\$198	0 4%
Interpreters	1 interpreter/day @ \$20	\$2/day/tourist	\$152	0 3%
Gateway Departure				
Lodging	Days 14-15 2 nights	\$50/night	\$1,100	3 3%
Meals	3 meals/day	\$30/day	\$660	2 0%
Transp (from site 2 + to airport)	Transp (from site 2 & in Vlad)	\$22/day/tourist	\$242	0 7%
Inbound supplier profit margin	15%	On in-country costs	\$1,933	5 7%
Contract to inbound supplier	NA	NA	\$14,820	43 8%
Total cost per group	NA	NA	\$29,410	87 0%
Total, outbound and inbound	NA	NA	\$29,410	87 0%
Overhead costs	15%	On all costs	\$4 412	13 0%
Total cost/group	NA	NA	\$33,822	100 0%
Price charged per tourist	\$3 950	NA	NA	NA
Total revenues per group	NA	NA	\$39 500	NA
Net revenues/group	NA	NA	\$5,568	NA
Tour operator gross profit margin	14 4%	NA	NA	NA

3 2 1 Outbound Tour Operator and Inbound Supplier

Table 3 1 reflects the outbound tour operator perspective because he or she markets the tour and handles the money⁵ The operator must aggressively market the tour through advertisements in tourism and outdoors magazines, mailing brochures, and through other means, as appropriate The operator will typically have built close working relationships with local travel agencies and the natural resource conservation NGOs active in the target country to help with the marketing, and with other tour operators with similar interests and itineraries

Most importantly, however, the operator will have built close business relationships with the professional inbound operators to manage all travel details inside the host country While the outbound operators sell the package tours and handle all details until the tourists are airborne and on their way (accompanied by an outbound operator guide), the inbound operators are expected to handle all details once the group arrives in the gateway arrival city The inbound supplier typically works under contract with the outbound operators and are responsible for making all in-country arrangements such as transportation between sites, accommodations, provide any specialized equipment, and local contacts (Telesis 1991)

In the table, the inbound supplier contract amounts to \$14,820 covering all estimated costs for lodging, meals, transportation, guides and interpreters, and any charitable donations in the gateway arrival and departure cities and on the sites The contract represents 43 8 percent of the total amount spent by the tourists including a 15-percent profit margin, all of which remains in-country (this means that 56 percent of the tourist dollars remain outside the RFE)

5 The tour operator may also choose to let the travel agents handle the tours and the money in exchange for a commission For purposes of this analysis, however, it is assumed that the tour operator is also the travel agent

The outbound operator covers all costs before departure and during the return trip, as indicated in the table. This includes lodging at the domestic gateway departure city (in this case Seattle) any transportation, and the outbound tour operator salary (4.4 percent). At least one outbound guide is assumed to accompany each tour joined by one inbound tour guide upon arrival in the arrival gateway city. The guide salaries are pegged to the number of tourists in the group—the larger the group, the higher the salaries.

The outbound operator also collects for overhead expenses (miscellaneous supplies, communication, advertising costs and the like) amounting to 15 percent of all costs incurred. Based on a tour price of \$3,950, the outbound tour operator also earns a profit of nearly 15 percent for his/her efforts. The subtotal of \$33,822 (100 percent of all costs) represents the total cost per tour group for the entire package.

3.2.2 Air Fares, Gateway Departure and Arrival Cities

By far, the most expensive single cost item is the international air fare comprising approximately 37 percent of the total cost in this example. The airfares are based on Seattle as the departure gateway city (round trip on Alaska Air to Vladivostok) meaning the participants will have to travel to and from Seattle at their own expense. Once in Seattle, the tour operator will provide lodging for one night before departure. The arrival gateway city is Vladivostok in this case where lodging and meals are once again provided for one night before departure to the field sites. The costs incurred at the departure and arrival gateways and en route during the return trip comprise only a small fraction of the total costs including all lodging and meals, local transportation, and interpretation. Only one day will be spent in the gateway arrival city to rest up before departing for the field sites. During this time there may be opportunities to shop for souvenirs and sightsee.

3.2.3 Sites

Expenses incurred on the sites include lodging, all meals, entrance fees (or more appropriately called charitable donations for tax purposes), local guides and interpreters and local transportation. In addition, it is assumed that each site will provide ample opportunity for the tourists to buy souvenirs and handicrafts and to offer donations for a variety of conservation purposes.

Costs incurred by the tour operators on behalf of the group on the field sites comprise the most important information in Table 3.1 because they contain the bulk of revenues available for recurrent cost funding (as analyzed in greater detail below). Money spent on meals, lodging, local tour guides and interpreters, local transportation and entrance fees (or charitable donations), comprise the stream of benefits attributable to tourism.

All expenses pertaining to the gateway arrival and departure, and on the sites reflect actual costs as currently charged by inbound suppliers (as confirmed through detailed interviews). These costs range between \$50 and \$80 per tourist per day, all costs included. Some operators will charge more if access to the more remote sites is gained with helicopters.

3.2.4 Revenues

According to Table 3.1, each tourist will pay an estimated \$3,950 for the 2-week tour for an average price of \$282 per day per tourist (which is well within the competitive range for comparable tour packages as shown in Annex C). The net revenues for the tour company are \$39,500 - \$33,822, or \$5,678, or roughly equivalent to a profit margin of nearly 15 percent for the outbound tour operator.

3 3 TOTAL EXPENDITURES PER TOURIST PER DAY

A summary of the expenditures on the two field sites per tourist plus the estimated amounts they spend in addition to the tour package (for souvenirs and handicrafts, various donations, purchase of educational materials, etc), is provided in Table 3 2 ⁶ The latter are rough estimates on the basis of the kinds of souvenirs currently manufactured and sold near the nature reserves in both kraï ⁷ Any donations by tourists are also included here—money usually donated in conjunction with a visit to nature museums, etc While the sale of educational materials (flora and faunas of the RFE, for example), are rare for the time being, the potential should be substantial given the richness of the natural resource base in the region

Table 3 2 Total Expenditures Per Tourist Per Day

Cost Variables	Site 1	Site 2	Total	Profit Margin	Benefits
Lodging	20	20	40	60%	24 00
Meals	15	15	30	40%	12 00
Local transportation	5	5	18	30%	5 25
Fees/char donations	15	15	30	90%	27 00
Scientist guides	3	3	6	25%	1 50
Interpreters	2	2	4	25%	1 00
Souvenirs,handicrafts	3	3	6	40%	2 40
Donations by tourists	2	2	4	90%	3 60
Educational materials	2	1	3	40%	1 20
Grand total/tourist	\$67	\$74	\$141	55%	\$77 95

The benefits from the investments are a function of the profit margins for each revenue source—the amounts left over after all costs have been covered The profit margins in Table 3 2 are input assumptions reflecting the assumed differences between the total revenues the investors (see Section 4) receive from the inbound supplier and their costs of providing the services For example, it is assumed that the provision of lodging will cost the investor only 40 percent of the amount received (wear and tear on linen, beds and other furniture, labor costs for maid services, etc), leaving a profit margin of some 60 percent Meals are assumed to cost up to 60 percent of the amount received, leaving a profit margin of 40 percent The only costs associated with fees and charitable donations and other donations made by the tourists (10 percent in each case) are assumed to reflect what the investor will probably have to pay in taxes, leaving a profit margin of 90 percent Local transportation, guides and interpreters are associated with the lowest profit margins

Based on the profit margins, the annual net benefit stream amounts to approximately \$78 per day per tourist This amount will be used for purposes of aggregating the total benefit from ecotourism in the next several sections

6 It is important to note here that the inbound supplier is assumed to simply pass the total cost of the meals, lodging transportation, interpreting, and entrance fees (charitable donations) through to the site operators In reality, however it is probable that the inbound supplier will attempt to negotiate with the site operators a lower daily fee so as to increase his profit margin beyond the 15 percent indicated in Table 3 1

7 Souvenirs currently manufactured and sold include tiger foot print cast in plaster pins Korean Pine cones some post cards photograph collections and other miscellaneous items

SECTION 4 CARRYING CAPACITY AGGREGATION OF REVENUES

4.1 INTRODUCTION

Little has been done to determine the ecological impacts of ecotourism other than raising the cautionary flag that too many tourists will ultimately destroy the resources on which the industry depends—"tourism destroying tourism"—a term coined by OECD in 1980 (as quoted by Boo, 1990). Youth (1990) cites the case of the Galapagos islands where hikers trample vegetation and erode trails. Degroot (as quoted by Alderman, 1990) says the reason for the degradation of the Galapagos was that the original management plan for the park called for a maximum of 12,000 visitors and when the demand for the park increased, government officials increased the visitors quota to three times the original allotment with no regard for carrying capacity concerns.

Determining and controlling carrying capacity are very important factors in planning ecotourism projects or programs. The long term sustainability of the resource base hinges on the ability and willingness of the resource owner to limit the number of visitor days over a given time period to a number that will accommodate the ecological and cultural integrity of the site. Youth (1990), for example, discusses how local communities around the world are having their traditional ways of life changed (if not destroyed) by tourism. Western and Henry (1979) cite how cheetah and lions have been reported to decrease hunting activity when surrounded by more than six vehicles. Harrington (as quoted by Alderman, 1990) reports how the uncontrolled expansion of tourism to the Brazilian Amazon is leaving behind a trail of litter and is destroying fragile forest habitats and wildlife in addition to the physical degradation of the environment through water and air pollution and trail erosion. Carrying capacity of a particular site is inherently difficult to assess since it cannot be tied only to the rate of use, or visitor days. The risk will always be present that, once having chosen a capacity and operating accordingly, one can damage the resource base before the real carrying capacity is truly known.

4.2 DEFINITIONS OF CARRYING CAPACITY

Lindberg (1991) discusses three kinds of carrying capacity: *ecological*, *tourist*, and *host social*. The ecological carrying capacity of a site refers to a level of visitation beyond which ecological damages will occur as indicated by changed wildlife behavior, the reduced incidence of certain wildlife in the area, or increased soil erosion, etc. The tourist social carrying capacity refers to the level of visitation beyond which visitor satisfaction declines due to overcrowding. Lastly, the host social carrying capacity refers to the level beyond which the local cultural stability and attitudes toward tourists are changed for the worse.

All three definitions are important and must be considered when determining the carrying capacity of a site *to which infrastructure and other investments should be calibrated*. In this case, however, given the fragile nature of the remaining tiger and leopard populations, it is most important to respect the ecological carrying capacity assuming it will be associated with the fewest tourists in any given period. This means that only up to X tourists per day (a low number) at one site will have no impact on the wildlife population in the area provided that trails and observation posts etc. are well designed and do not disturb animal feeding or migratory habits. On the other end of the spectrum, Y tourists per day (a higher number) may indeed have a severe impact on the wildlife in the area. It is in this sense that the phrase "tourism kills tourism" is true. Whereas the short run profitability of catering to Y tourists per day may be substantial, the long run prospects are bleak because tourism overcrowding will effectively destroy the very attractions that made ecotourism in the area possible in the first place.

4.3 AGGREGATION

The next step in the economic analysis process is to aggregate the number of visits to the field sites on an annual basis 365 days/year multiplied by the number of beds available for tourists at each field site (this will be discussed in the following section) If sites 1 and 2 can accommodate 12 tourists each per day, for example (see Section 5 on investments, Table 5.1), the maximum aggregate number of visitors is 4,380 bed nights per year in each site These numbers should ideally reflect the maximum number of bed nights the sites could sell per year based on ecological and scientific criteria

Because the tourist season is considerably shorter as indicated in Table 3.1, however, the occupancy rate of the site will be considerably lower than 100 percent A 118-day tourist season as assumed in Table 3.1, for example, may reduce the total occupancy rate for the year to less than 20 percent as shown in Table 4.1 where the facilities are fully or only partially occupied during the tourist season and closed during the off season On other, more accessible sites, the annual occupancy rate may be higher as tourists may also enjoy the facilities during the off season The assumed 20-percent rate means that Sites 1 and 2 will accommodate 876 visitor days per year each, or a total of 1,752 ecotourism visitor days to the RFE *based on the one tour analyzed* The carrying capacity assumptions for the two sites only reflect the “market shares” of the total carrying capacity of the RFE region now occupied by endangered and threatened wildlife species Whereas the analysis covers only two sites and their surrounding areas, there may be another 50 sites or more in the region that could be developed for tourism and be equally attractive in terms of different tourism experiences When other sites and other tours come on line the number of visitor days to the region will increase accordingly In this sense, the total carrying capacity for the entire region will be substantially higher

Ideally, tourism should generate enough local benefits to cover all costs of operating and maintaining the tourist attraction as all investments made will certainly have recurrent cost implications Buildings, vehicles, equipment, trails, etc will have to be maintained and some eventually replaced Office supplies and other consumable necessities will have to be procured on a regular basis, and personnel will have to be trained and retrained as needed The visitor capacity (based on the ecological definition) per site (Table 4.1) multiplied by the assumed occupancy rate per year multiplied by the average expenditures per tourist from Table 3.3 equals a total revenue stream of \$58,692 and \$64,386 per year for sites 1 and 2, respectively These revenues define the upper limit of the economic potential of the sites to be distributed between the public and private sectors

Table 4.1 Carrying Capacity Assumptions

Variables	Site 1	Site 2	Total
Visitor capacity/yr	4,380	4,380	NA
Occupancy per year	20%	20%	NA
Visitor bed nights	876	876	1,752
Total exp per year	\$58,692	\$63,386	\$123,078

Determining the maximum sustainable carrying capacity for the entire region, however, will require additional and careful planning with respect to the placement of tourism infrastructure in geographically separated access points so as to avoid excessive contact between different groups visiting the region at the same time The overall management of the region and its tourism infrastructure will, therefore, necessitate tight control over the number of permits issued to build lodges or operate tours in the region All investments, therefore, should be calibrated to the sustainable carrying capacity of the region, not just the sites being analyzed

Another most critical element of the analysis is the fact that returns on the investments made can only be recovered if the tourism option is taken seriously. As the team observed on several occasions, the anticipation is that only a few tours will pass through the area during the year. Such frequency will *not* generate the kinds of investment returns needed to justify the investments. According to Table 4.1, as many as 15 tours will have to pass through site 1 during the year (876 bed nights divided by the assumed 10 tourists per tour divided by six days of residence) in order to make the investments in the necessary infrastructure, trails, etc., worthwhile. In order to realize the revenues indicated in Table 4.1, therefore, Tour 1 will have to be followed by Tour 2 on the same day or the day after Tour 1 has left during the tourist season, each tourist spending an average of \$67 per day (Table 3.3). During slack periods, active marketing in the major cities (Vladivostok and Khabarovsk) should occur to attract visitors from both the international and domestic communities to spend weekends or short periods on the sites to keep the occupancy rate as high as possible. In Kenya, for example, it is common for short-term technical assistants (for the World Bank, USAID, etc.) to spend weekends in the wildlife parks by signing up for locally arranged tours. They vacate their hotels in Nairobi for the weekend and sometimes actually save money while receiving lodging and meals during the weekend in the parks plus gaining recreational experiences in the process. It is essential that firm commitments are made between outbound operators and inbound suppliers, the local community institutions involved, the investors, and the public sector, to effectively market tourism in the RFE worldwide as well as domestically to ensure that the facilities created are indeed occupied for as much time as possible.

SECTION 5 REQUIRED INVESTMENTS

5.1 INTRODUCTION

Under the current political and economic climate, the probable investors in ecotourism facilities would be the zapovedniki provided they could raise the funds through soft loans from the international NGO and/or donor community. All reserves visited by the study team have more or less elaborate plans for tourism developments including the building of cabins, banyas, tourism visitor centers, and in some cases, wildlife rehabilitation centers. While they all insist that tourism inside the zapovedniki will be severely limited, they all agree that the zapovedniki can gain much from hosting tour groups in the adjacent buffer zones, in the nearby national parks and/or zakazniki.

The minimum investments recommended by the team needed to ensure the tourism revenues estimated in the previous section are presented and briefly discussed below. Investments will be made in revenue generating infrastructure such as cabins and all accompanying infrastructure (banyas, outhouses with seats, etc.), and all other infrastructure and equipment needed to accommodate tourists and make their stay a reasonably comfortable one. Other needed investments include the establishment and maintenance of trails and observation posts, and temporary lodging equipment such as tents.

5.2 GENERAL ASSUMPTIONS

The analysis of the economic feasibility of ecotourism is presented in the forms of net present values (NPV) and internal rates of return (IRR) based on a 20-year analytical time horizon, i.e. the infrastructure and other investments made are assumed to have a 20-year life span. General assumptions relating to the discount rate and real price and cost appreciation rates over time are briefly discussed below.

5.2.1 Discount Rate

A key element for the analysis is which discount rate to use to compute the net present value (NPV) of the investments made. In the NPV approach, future costs and benefits are expressed in present value terms by the use of a discount rate. The project is said to be feasible if the NPV is greater than or equal to zero and/or if the IRR is greater than or equal to the opportunity cost of capital (selecting a discount rate is not needed to compute the IRR because the approach solves for or finds the rate that equates the NPV to zero). The choice of an appropriate discount rate for the ecotourism analysis is not based on any documented statistics at this point given the economic turmoil experienced by the Russian economy over the past several years. For purposes of the analysis, however, a 15-percent discount rate is assumed to reflect the *future* opportunity cost of capital when the major economic variables have settled down and inflation has subsided (as discussed in Section 1 above). This rate is also assumed to reflect the local perspective including an appropriate risk factor.

The communities in the target areas are generally subsistence level economies and, as such, they tend to be risk averters. They know that their present system will produce enough food (through hunting and gathering) to feed their families under normal conditions, but rarely any surplus to sell. If someone from the "outside" comes to the village with ideas on how the economic life in the village can be improved, it is not certain that the local people will embrace the proposals with enthusiastic participation because anything new implies a risk. Risk averse local communities, therefore, tend to have a higher implicit discount rate to compensate for the risk factor. The 15-percent rate is assumed to be five percentage points above the most widely assumed financial interest rate of 10 percent.

5 2 2 Real Cost and Price Appreciation Rates

The right column in Tables 5 1 and 5 2 show the recurrent costs occurring between years 1 and 20. Assumptions must be made as to the probable behavior of these costs over time in real terms. The discount rate assumed above is a *real*, not a *nominal* rate where the real rate is a true rate without inflation. For example, although the cost of an input may have increased nominally by 10 percent per year, the real cost will actually have declined if the average rate of inflation during that time period was higher than the average nominal cost increase. Over a 20-year period, any real cost or prices increases (or decreases) may have a profound impact on the feasibility of the investments as the difference between costs and prices widens over time. Most published statistics are quoted in nominal terms, i.e. they include inflation.⁸ The modeling framework developed for this study accommodates any real increases in costs and/or prices, although none is assumed for the base case analysis at this point (for lack of usable published statistics). Different "what-if" real price increase scenarios will be tested in the sensitivity analysis.

Table 5 1 Investments, Site 1

Variables	Input Assumptions	Year 0	Years 1-20
Fixed Facilities			
Land acquisition	30 hectares @ \$500	\$15,000	NA
Buildings (furnished)			
Cabins	12 beds @ \$200 turnkey	\$48 000	NA
Banya/shower	2 @ \$1,500	\$3,000	NA
Outhouses	3 @ \$975	\$1,125	NA
Vis cntr/museum/WL rehab	1 facility @ \$30 000	\$30,000	NA
Mini hydro or solar	1 facility @ \$5,000	\$5,000	NA
Ranger house	4 beds @ \$170 turnkey	\$10,200	NA
Kitchen and dining	1 facility @ \$5,250	\$5,250	NA
Maint of above	5% of initial investment	NA	\$5,129
Other construction			
Fencing/gates	250 m @ \$4 00	\$1,000	NA
Road access	10 km @ \$500	\$5,000	NA
Trail improvements	25 km @ \$65	\$1,625	NA
Trail outhouses	3 @ \$250	\$750	NA
Maint of above	5% of initial investment	NA	\$419
Temporary Facilities			
Tents	6 units @ \$400	\$2,400	NA
Medical kits	4 @ \$75	\$300	NA
Misc tools	1 @ \$250	\$250	NA
Replacement of above	5% of initial investment/yr	NA	\$148
Garbage disposal	4 @ \$10	\$40	NA
Maint of above	5% of initial investment	NA	\$254

⁸ The nominal rate should be adjusted to a real rate as follows (Christophersen 1995)

$$\text{Real rate} = \left(\frac{1 + \text{nominal}}{1 + \text{inflation}} - 1 \right) \times 100$$

The same logic is applicable to real cost and price appreciation (or depreciation) rates over time. In most analyses, costs and prices are assumed to remain constant over the analytical time period, or increase/decrease at the same rates. In reality, however, costs and prices often fluctuate at different rates. If prices increase faster than costs in real terms, then the project becomes more attractive as the gap between costs and prices widens over time.

Variables	Input Assumptions	Year 0	Years 1-20
Vehicles			
4WD	2 @ \$12,000	\$24 000	NA
Snowmobiles	2 @ \$3 000	\$6 000	NA
Gasoline	1,000 liters/year @ \$0 28	NA	\$560
Maint of above	5% of initial investment	NA	\$1,500
Replacement of above	5% of initial investment	NA	\$1,500
Labor			
Guides	3 @ \$5/day for 260 days/yr	NA	\$3,900
Interpreters	1 @ \$6/day for 118 days/yr	NA	\$708
Ground keepers	3 @ \$4/day for 260 days/yr	NA	\$2,080
Maid/cook	3 @ \$6/day for 118 days/yr	NA	\$1,416
Drivers	2 @ \$5/day for 260 days/yr	NA	\$2 600
Training			
Guides	10 days 2 instr @ \$50/day	\$1,000	NA
Interpreters	2 days 1 instr @ \$50/day	\$100	NA
Ground keepers	5 days 1 instr @ \$50/day	\$250	NA
Maid/cook	5 days 2 instr @ \$50/day	\$500	NA
Drivers	5 days 1 instr @ \$50/day	\$250	NA
Retrain (per year)	5% of initial investment/yr	NA	\$105
Property damages caused by WL	\$2,000/year	NA	\$2 000
Marketing, advertising, communications	\$2 000/year	NA	\$2,000
Total		\$161 040	\$24,318

Table 5 2 Investments, Site 2

Variables	Input Assumptions	Year 0	Years 1-20
Fixed Facilities			
Land acquisition	30 hectares @ \$500	\$15,000	NA
Buildings (furnished)			
Cabins	12 beds @ \$200 turnkey	\$48,000	NA
Banya/shower	2 @ \$1 500	\$3,000	NA
Outhouses	3 @ \$975	\$1,125	NA
Vis cntr/museum/WL rehab	1 facility @ \$30 000	\$30,000	NA
Mini hydro or solar	1 facility @ \$5,000	\$5,000	NA
Ranger house	4 beds @ \$170 turnkey	\$10,200	NA
Kitchen and dining	1 facility @ \$5 250	\$5 250	NA
Maint of above	5% of initial investment	NA	\$5 129
Other construction			
Fencing/gates	250 m @ \$4 00	\$1,000	NA
Road access	10 km @ \$500	\$5,000	NA
Trail improvements	25 km @ \$65	\$1 625	NA
Trail outhouses	3 @ \$250	\$750	NA
Maint of above	5% of initial investment	NA	\$419
Temporary Facilities			
Tents	6 units @ \$400	\$2 400	NA
Medical kits	4 @ \$75	\$300	NA
Misc tools	1 @ \$250	\$250	NA
Replacement of above	5% of initial investment/yr	NA	\$148
Garbage disposal	4 @ \$10	\$40	NA
Maint of above	5% of initial investment	NA	\$254

Variables	Input Assumptions	Year 0	Years 1-20
Vehicles			
4WD	2 @ \$12,000	\$24,000	NA
Snowmobiles	2 @ \$3 000	\$6 000	NA
Gasoline	1 000 liters/year @ \$0 28	NA	\$560
Maint of above	5% of initial investment	NA	\$1,500
Replacement of above	5% of initial investment	NA	\$1 500
Labor			
Guides	3 @ \$5/day for 260 days/yr	NA	\$3 900
Interpreters	1 @ \$6/day for 118 days/yr	NA	\$708
Ground keepers	3 @ \$4/day for 260 days/yr	NA	\$2,080
Maid/cook	3 @ \$6/day for 118 days/yr	NA	\$1,416
Drivers	2 @ \$5/day for 260 days/yr	NA	\$2,600
Training			
Guides	10 days 2 instr @ \$50/day	\$1,000	NA
Interpreters	2 days, 1 instr @ \$50/day	\$100	NA
Ground keepers	5 days, 1 instr @ \$50/day	\$250	NA
Maid/cook	5 days, 2 instr @ \$50/day	\$500	NA
Drivers	5 days, 1 instr @ \$50/day	\$250	NA
Retrain (per year)	5% of initial investment/yr	NA	\$105
Property damages caused by WL	\$2,000/year	NA	\$2,000
Marketing, advertising, communications	\$2,000/year	NA	\$2,000
Total		\$161,040	\$24,318

5.3 INVESTMENTS

The investments in the two sites are estimated and summarized in Tables 5 1 and 5 2 It is assumed that investments will be made only in infrastructure and services that will generate profits from tourism in the long run, i e in lodging infrastructure and the provision of local transportation, guide and interpretation services and the like Tables 5 1 and 5 2 show the standardized assumptions for all investment variables applicable to both sites Although these costs may vary between sites, they reflect local field realities based on numerous interviews carried out in the field by the study team

5 3 1 Sites 1 and 2

Fixed facilities, sites 1 and 2 It is assumed that "turnkey" lodging (i e the building plus all furniture and accessories) will be provided on both sites for up to 12 tourists at an average cost of \$200 per m² for 20 m² per bed including common areas, corridors and the like, for a total cost of \$48,000 for the structures Two banyas and/or showers will be provided, one for the staff of the facilities and one for the tourists for a total cost of \$3,000 Three outhouses, also for the staff and tourists (two with seats for western tourists) will cost approximately \$1,125 A visitor center containing an office and a meeting room to show slides and videos, and/or present lectures, etc will be provided for a total cost of \$30,000 Alternatively, the same amount of money could be spent on building a nature museum, or creating a wildlife rehabilitation center for orphaned animals to be reintroduced into the wild when rehabilitated Investment in a mini-hydro facility or a solar installation is also envisioned to provide power for lighting at an estimated cost of \$5,000 An additional four beds will be provided for rangers to be added to the staff as a result of the increased influx of tourists for a total cost of \$10,200 These rangers will also be trained as tour guides A kitchen/dining facility will be built for a total cost of \$5,250 Maintenance of all structures is estimated

to cost an average of five percent of the initial investment requirements, or \$419 per year. All cost estimates are consistent with information obtained from building engineers and others in the field.

All buildings recommended are new because existing infrastructure on the sites are largely intended for use by scientists and will not always be available for tourists. It is recommended, however, that such facilities be made available for tourists during times of overflow.

A land acquisition variable is included at a cost of \$500 per hectare for 30 hectares (the estimated area needed for placement of the infrastructure, also projected for the proposed Podkova development for the Sikhote-Alin Reserve) for a total of \$15,000. While it is recognized that land is not purchased in Russia as in the west, it is expected that some value must be given up in exchange for being allowed to build on the 30 hectares. The \$15,000 cost is assumed for purposes of the analysis to reflect an approximate cost.

Temporary facilities, sites 1 and 2 Temporary facilities (camping gear, medical kits, tools, etc.) are needed when the tourists are temporarily away from the base camp. While on site for several days, for example, one or more days may be spent tent camping away from the base camp. It is also possible that the tents will have to be used in the base camp when the cabins are already fully occupied. It is assumed that each camping gear unit costs \$400 including the 2-person tent and all accessories (stove, lantern, cooking equipment, and utensils). Six such units are recommended to accommodate 12 tourists.

Vehicles, sites 1 and 2 Two 4WD vehicles (Russian make) configured for tourism will be procured at a total cost of \$24,000. The vehicles will be used to transport the tourists between sites and on the site while in residence. While not used for tourists the vehicles can be used for regular zapovednik business. In addition, two snowmobiles at a total cost of \$6,000 will be procured to facilitate tourism during winter. Maintenance and replacement of the vehicles is assumed to cost an estimated \$1,500 per year, respectively (five percent of the initial investment in each case).

Labor, sites 1 and 2 Anticipating an increasing influx of tourists, additional workers will be added at each site. They include three rangers (who will also be trained as guides), local interpreters, ground keepers, maids and cooks, and drivers for the two tourism vehicles. It is further anticipated that the interpreters and maids/cooks will only be working during the tourism season (estimated at approximately 118 days—see Table 3.1) while the rest of the staff will be full time employees.

Training, sites 1 and 2 All additional workers hired in anticipation of the increased tourism will be trained in a variety of areas. The rangers will be trained in guiding techniques and first aid, local interpreters in interpretation techniques, ground keepers in daily routines and upkeep requirements, the maids and cooks in cleaning and cooking standards, as well as nutritional requirements for tourists, and the drivers in driving safety techniques and mechanics.

Property damages caused by wildlife, sites 1 and 2 One important factor in the success of any ecotourism effort is to make budgetary provision for any damages that can be caused by wildlife. The tiger population in the region, for example, is one of the major reasons why ecotourism may work in the area. The presence of tigers and the (remote) possibility of observing some of them is a very important promotion item in the tour package. It is also probable that effective protection of the area and the tiger habitat (through ecotourism) will also increase the incidence of tigers in the area, i.e. poaching will be reduced. As a result, it is probable that the game population will also decrease in the area as more tigers compete for prey. This is a direct impact on the local population who depends, to a significant degree, on hunting and gathering. To alleviate this possibility, the public sector should make at least a small budgetary provision for covering such decreases in the availability of game meat as a cost of operations. The money could be used to pay direct compensation for damages caused, or for community development projects.

Precedents for such provision are well established in East Africa, Kenya in particular. The Masai tribal groups in that country, for example, receive up to \$30,000 per year as compensation for crop losses caused by wildlife populating the Amboseli National Park (Laarman and Durst, 1991)

It is important to note here that, if the \$2,000 is not spent for its intended purpose, the money should be set aside for the creation, operation and maintenance of a wildlife rehabilitation center at the site. As mentioned above, one of the most important tourism drawing cards is the possibility of seeing a tiger in the wild. This, however, is extremely rare. A well designed rehabilitation facility will provide the opportunity to see the rare animals in as close to a wild habitat as possible.

Marketing, advertising, communications, sites 1 and 2 In addition to the marketing efforts carried out by the outbound tour operator and the inbound supplier, the site operators (zapovedniki) should also carry out aggressive marketing efforts, with a budget as indicated in Tables 5.1 and 5.2. As assumed in the previous section, only 20 percent of the facility's capacity will be occupied per year which leaves it unoccupied for 80 percent of the year. This provides an excellent opportunity for the site operators to, perhaps with discounted daily rates, entice visitors from Vladivostok and/or Khabarovsk to come and spend weekends and/or holidays on the sites.

5.3.2 Equity Financing

Private investors will be expected to contribute some equity to demonstrate a serious commitment to the proposed investments, and seek bank financing for the rest. A 25-percent equity position is assumed in the base case for the initial investments estimated for all three sites, i.e. 25 percent of \$161,040 (the total of year 0 investments from Tables 5.1 and 5.2) equals an equity position of \$40,260, and a loan position of \$120,780 (times 2 for the two sites) to be repaid over the following four years. It is further assumed that a one-year grace period (one year of the four) will be granted during which only interest will be paid. The debt servicing burden, therefore, equals an annual payment of \$105,798 per year as indicated in Table 5.3 (interest and principal), based on an assumed interest rate of 15 percent and 75 percent of the total capitalization required in Year 0.

Table 5.3 Debt Servicing, Sites 1 and 2

Year	Interest 15%	Principal \$105,798	Remaining Balance
0	0	0	\$241,560
1	\$36,234	0	\$241,560
2	\$36,234	\$69,564	\$171,996
3	\$25,799	\$79,998	\$91,998
4	\$13,800	\$91,998	0
5-20	0	0	0

5.3.3 Summary of Investments

Table 5.4 summarizes the investments for all sites, including the initial capital investments made in year 0 and all subsequent recurrent costs in years 1-20. The initial investments in year 0 are the totals taken from the next to the last columns in Tables 5.1 and 5.2, the recurrent costs occurring between years 1 and 20 are the totals from the last column in Tables 5.1 and 5.2. The debt service column in Table 5.4 reflects only the interest payments made (from Table 5.3) since they are the only out-of-pocket costs to the investor. Payment on the principal only adds to the owner's equity.

Table 5 4 Summary of Investment Costs, Sites 1 and 2

Year	Fixed Facilities	Temporary	Vehicles	Labor/ Training	WL Damage +Adv	Debt Service	Total
0	249,525	5,980	30,000	2,100	0	0	287,605
2	11,095	803	7,120	21,408	8,000	36,234	84,660
3	11,095	803	7,120	21,408	8,000	36,234	84,660
4	11,095	803	7,120	21,408	8,000	25,799	74,225
5	11,095	803	7,120	21,408	8,000	13,800	62,225
6-20	11,095	803	7,120	21,408	8,000	0	48,426

5 4 RESULTS

Given the assumptions, the investments are financially feasible as indicated in Table 5 5. The net cash flow (net benefit) in year 0 is a negative \$287,605 derived from Table 5 4, followed by positive cash flows every year thereafter. The benefits are derived from Tables 3 2 (the total of \$77 95 per tourist per day expenditures) and Table 4 1 (a total of 1,752 tourist days are sold per year, representing a 20-percent occupancy rate), or $\$77.95 \times 1,752$ equals \$136,568 worth of annual benefits. Based on the 20-year analytical period, the NPV of \$180,351 indicates a strong feasibility, particularly when accounting for only a 20-percent occupancy rate of the facilities. The IRR of 24 2 percent indicates the same result since the rate of return is well above the assumed opportunity cost of capital of 15 percent.

Table 5 5 Net Benefits

Year	Total Benefits	Total Costs	Net Benefits
0	0	\$287,605	-\$287,605
1	\$136,568	\$84,660	\$51,909
2	\$136,568	\$84,660	\$51,909
3	\$136,568	\$74,225	\$62,343
4	\$136,568	\$62,225	\$74,343
5-20	\$136,568	\$48,426	\$88,143
NPV			\$180,351
IRR			24 2%

5 5 SENSITIVITY ANALYSIS

The sensitivity analysis is the "what-if" portion of the analysis—what if the assumptions are too optimistic or too pessimistic. The base case analysis, as presented, is based on a number of assumptions that have been confirmed through field interviews to the extent possible, i e, they represent the best estimates given the time allotted to collect the needed data in the field. The purpose of the sensitivity analysis is to vary several key assumptions one by one and trace the implications on the NPVs, i e, how the results will change if the assumptions are changed.

The assumptions varied in Table 5 6 include (i) the occupancy rate, (ii) the discount rate, (iii) composite of costs, and (iv) composite of benefits⁹ Each assumption will be varied by increments of plus or minus 15 percent, up to or less than a maximum of 45 percent of the base case assumptions For example, if the base case assumption for the discount rate is 15 percent, a 15 percent increase means that the analysis would be rerun with a $15 \times (1 + 15) = 17.25$ percent discount rate assumption

Table 5 6 Sensitivity Analysis

Variables	-45%	-30%	-15%	Base Case NPV	+15%	+30%	+45%
Occupancy rate	-204,321	-76,097	52,127	180,351	308,575	436,799	565,023
Discount rate	467,147	347,048	253,823	180,351	121,611	74,012	34,955
Cost composite	483,865	382,694	281,522	180,351	79,180	-21,992	-123,163
Benefit composite	-204,321	-76,097	52,127	180,351	308,575	436,799	565,023

The results indicate that all variables are fairly sensitive to the assumptions except the discount rate For example, a 30-percent reduction on the occupancy rate (from 20 percent to 14 percent) will switch the NPV from positive to negative, the latter indicating non-feasibility This means that the occupancy rate can probably decline by at least 20 percent vis-a-vis the base case assumption before the NPV switches from positive to negative¹⁰

The discount rate is the least sensitive variable since the NPV does not switch from positive to negative even with a 45-percent increase in the rate An increase in the composite of costs by nearly 30 percent can be tolerated before the NPV switches to negative as indicated in the table, all other assumptions held constant at their base case values Approximately the same level of sensitivity is associated with the composite of benefits, as the NPV switches to negative as a result of decreasing the benefit stream by 30 percent

9 The composites refer to the aggregation of all individual costs or benefits and varying the totals

10 The break-even point is defined when the NPV equals zero i.e. when the costs equal the benefits

SECTION 6
CONTRIBUTION TO SUSTAINABLE COMMUNITY DEVELOPMENT

6.1 INTRODUCTION

Based on the base case analytical results (positive NPV), ecotourism will generate sufficient revenues to cover all costs while also generating both employment and income in the local communities. This section provides rough estimates (summarized in Table 6.1) of the employment and income impacts generated locally. Two categories are considered: (i) the payroll comprised by the additional workers hired as a result of creating the tourism facilities, and (ii) other income generated through the sale of lodging, meals, guide and interpreter services, fees and donations, the sale of gasoline locally, and souvenir sales.

Table 6.1 Employment and Income Impact Per Year

	SITE 1			SITE 2		
	Workers	Days/ Year	Income/ Year	Workers	Days/ Year	Income/ Year
Payroll						
Guides/rangers	3	780	\$3,900	3	780	\$3,900
Interpreters	1	118	\$708	1	118	\$708
Ground keepers	2	520	\$2,080	2	520	\$2,080
Maids/cooks	2	236	\$1,416	2	236	\$1,416
Drivers	2	520	\$2,600	2	520	\$2,600
Other Income						
Lodging	NA	NA	\$17,520	NA	NA	\$17,520
Meals	NA	NA	\$13,140	NA	NA	\$13,140
Transportation	NA	NA	\$4,380	NA	NA	\$10,950
Fees/donations	NA	NA	\$13,140	NA	NA	\$13,140
Scient guides	NA	NA	\$2,628	NA	NA	\$2,628
Interpreters	NA	NA	\$1,752	NA	NA	\$1,752
Souv /handicr	NA	NA	\$2,628	NA	NA	\$2,628
Tourist donat	NA	NA	\$1,752	NA	NA	\$1,752
Educ materials	NA	NA	\$1,752	NA	NA	\$876
Gasoline	NA	NA	\$560	NA	NA	\$560
Tot no workers	10	2,174	\$69,956	10	2,174	\$75,650
FTE years	NA	8.4	NA	NA	8.4	NA
Mult effect (3)	NA	NA	\$209,868	NA	NA	\$226,950

6.2 EMPLOYMENT

The employment impact of ecotourism, given the assumptions and analysis presented in this report, is presented in Table 6.1. All numbers given are derived from tables 3.2, 5.1 and 5.2. The investors will employ workers to accommodate the projected tourism traffic at the field sites which translates into an overall employment impact. As indicated in the table, sites 1 and 2 will employ 10 additional workers each which, when multiplied by the number of days worked per year, generates a total of 2,174 days.

6 3 INCOME

The income generated comes from two sources (i) the payroll of the new workers added as a result of having built the facilities, and (ii) the other income generated consisting of the items listed in the table. Note that the scientist guides and interpreters are listed under other income because they are not new workers, yet they are paid in addition to their regular salaries to conduct tours and interpret for the tourists. This additional income is new income and, as such, is counted as a contribution to the total income impact in the communities. Sites 1 and 2 generate \$69,956 and \$75,650 worth of gross income per year, respectively, given the base case assumptions, and assuming that all raw materials (the food, supplies, gasoline, etc) are purchased locally.

6 4 MULTIPLIER EFFECT

Finally, it is reasonable to assume that each dollar spent in the local community has a multiplier effect, i.e. each dollar spent will lead to additional expenditure in the community by some multiplier factor. In this case, a multiplier of three is assumed (this is not a documented assumption) which means that the \$69,956 spent on site 1 will eventually generate a total of \$209,868 worth of income in the local community. Likewise, the \$75,650 spent on site 2 will generate a total of \$226,950 worth of income. The grand total impact of these two sites amounts to \$463,818.

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ANNEX A TERMS OF REFERENCE

DO TASK 1 2e - WORK PLAN TASK 11n ENCOURAGE ECOTOURISM IN NEWLY PROTECTED AREAS

A Background

The potential for ecotourism (or nature based tourism) in the Russian Far East has been the subject of much recent discussion but not of rigorous analysis. This task will carry out such analysis on two or three example sites in the Sikhote-Alin region (already gazetted for protection) with particular emphasis on documenting (i) the physical and historical tourism attractions of the areas, and (ii) the economic and financial feasibility of creating and maintaining ecotourism infrastructure as an alternative to commercial (timber, minerals, etc.) exploitation of the areas. The analytical framework developed for the example sites will then be applied to other areas considered for protection but not yet gazetted, such as the proposed Tiger Zakaznik and Kemu-Amgu National Park. The following scope-of-work is proposed for consideration by EPT and the PCC.

B Scope of Work

The ecotourism study will be organized into six principal parts as follows:

1 Statement of the Problem and Key Issues

This section will provide an overview of the key problems and issues identified by the study team, including a summary of the methodology and principal data sources used in carrying out the study. One major issue to be addressed is resource exploitation versus preservation with particular emphasis on the conservation of the remaining Amur tigers and other endangered wildlife species.

2 Resource Assessment

The initial phase of data collection will focus on the resource base perceived to have ecotourism potential (sites recommended for ecotourism infrastructure developments and surrounding attractions). The discussion will include physical descriptions of the attractions, tourist activities envisioned, and the estimated tourist carrying capacity per year.

3 Breakdown of the Tourist Dollar

The breakdown of the tourist dollar is essential in order to determine how much is spent in the host country and, more importantly, at the tourist sites. The total magnitude of these expenditures comprises the upper limit of the pool of money available for recurrent cost funding needed to ensure the sustainable integrity of the tourist attraction. In a broad sense, tourist money that remains in the country and at the site(s) are the direct economic benefits of tourism. Two major kinds of expenditures will be considered: (i) breakdown of the total amount tourists pay tour companies for the entire tour package, including en route to and from the host country, in the country and on the site, and (ii) breakdown of the amount spent in-country *in addition to* the cost of the tour package for handicrafts, food and drink, and donations, etc. The percentages of the tour package cost spent in-country and at the site plus additional expenditures made comprise the economic benefits used in the analysis.

4 Carrying Capacity

The study will estimate the tourism carrying capacity per ecotourism site as a function of the behavioral patterns of the wildlife attractions in the surrounding areas (i.e. infrastructure development and number of tourists should be calibrated to ensure that wildlife behavior in the area is not disturbed or compromised) The section will also state the assumptions concerning occupancy rates of, including peak and off season tourism

5 Required Investments

The study will address the investment requirements in both the public and private sectors Private entrepreneurs will be expected to invest in revenue generating infrastructure and activities such as lodges, the provision of local guides, porters, vehicles for the tourists, and training for guides and lodge workers The public sector will be expected to make appropriate investments in interpretation or education centers, transportation for the rangers, training of rangers, training for the local population, and maintain the tourist trails and observation posts, etc

6 Potential Contribution to Sustainable Community Development

The study will, based on the analysis, estimate the contribution of ecotourism to the economic welfare of local communities and make judgements with respect to the adequacy of such contributions as incentives to preserve wildlife habitats and the current tourist attractions in the region

C Needed Russian Personnel

- One wildlife biologist (40 days)—Uri Shebnev (naturalist for the Kedrovia Pad Reserve) or Uri Orlov (biologist who has also led tours in the RFE)
- One engineer (for infrastructure development cost estimation purposes—20 days)
- One tour manager (40 days)—Luba Khobnyeva (responsible for tourism at Sikhote-Alin Reserve)

It is strongly recommended that priority be given to the Russian counterparts identified above who have already established excellent working relationships with the recommended US consultants (see below)

D Recommended Subcontractors

- CID is the recommended subcontractor for the services of Dr Howard Quigley (see below)
- IRG is the recommended subcontractor for the services of Mr Steve Levin (see below) Dr K Christophersen's LOE will be covered by core time under IRG's subcontract

E Recommended Consultants

- Co-team leader Dr Kjell Christophersen, Natural Resource Economist, IRG (LOE 34 days core time)
- Co-team leader Dr Howard Quigley, President, Hornocker Wildlife Research Institute located at the University of Idaho (LOE 15 days)
- Mr Steve Levin, independent consultant and tour operator (LOE 34 days)

Dr Christophersen is highly qualified for this assignment having developed the analytical approach to determine the economic and financial feasibility of ecotourism in Africa in 1991 (under the auspices of an IQC assignment for USAID's Africa Bureau) His role will be to adapt the analytical approach to RFE conditions and carry out the economic and financial feasibility analyses Dr Quigley, Co-Director of the

Hornocker Wildlife Research Institute, based in Moscow, Idaho, is also the current Co-Director of the Siberian Tiger Project (funded by National Geographic and Exxon) Mr Levin is recommended because of his direct and relevant experience with RFE ecotourism having already led several tours to the area Biographical data sheets are attached

F Recommended Timing and LOE

Field work in RFE April 17-May 5, 1995 The field work will be carried out by the three Russian counterparts, Dr Christophersen and Mr Levin Dr Quigley will participate prior to departure (estimated 15 days LOE by the US consultants—five days each—to collect relevant background literature and statistics in the US) The primary site for the analysis is the community of Terney and the surrounding region which does not require the field presence of Dr Quigley Approximately 19 days will be spent in the field by Christophersen and Levin (including travel time) followed by no more than 10 days LOE for each consultant back in the US to finalize the report after receiving additional data and other inputs from Russian counterparts following the field work, as well as comments from reviewers of the initial draft report It is expected that the Russian counterpart consultants will be recruited well in advance of the arrival of the US consultants, and that they will have collected relevant statistics and other information as indicated above in advance of the scheduled arrival of the US team, and that they will continue to collect needed data after the field work Drs Christophersen and/or Quigley should return to RFE early fall 1995 (preferably in conjunction with other RFE assignments) to finalize the report in collaboration with the Russian counterparts and present the results

G Deliverables

- Initial draft report submitted in the field before departing (early May, 1995)
- Final report prepared/submitted by US consultants and Russian counterparts by no later than September 15, 1995

ANNEX B INDIVIDUALS AND INSTITUTIONS CONTACTED

Alexandrova, Leena, Economist, Sikhote-Alin Zapovednik, Terney, Primorski Krai

Andreevich, Kozachko, Nikolay, Director, Leskhoz, Melnidchnoye

Astafyev, Anatoly A , Director, Sikhote-Alin Zapovednik, Terney, Primorski Krai

Balagansky, Nicolai M , Chief, Hunting Economic Board, Khabarovsk Krai

Bannikov, Leonid S , Geographic Society, Vladivostok

Bersenev, Yuri, Committe for Environmental Protection, National Geographical Society, Academy of Sciences, Vladivostok,

Dawkins, John, EPT/Khabarovsk

Dunishenko, Yuri M , Wildlife Foundation, Khabarovsk

Grechiskin, Vladimir I , Hotel Soyuz-Roliz, Vladivostok

Green, Olga, Environmental Education instructor, Vladivostok

Gromyko, Misha, Sikhote-Alin Zapovednik, Terney, Primorski Krai

Gulbina, Anna, Institute of Marine Biology, Far East Branch, Russian Academy of Sciences

Ivanov, Sergei, Director, Tourism and Ecological Education Dept , Bolshekhkhehtsirski Zapovednik

Kabalik, Larisa, Zov Taiga, Vladivostok

Karakin, Vladimir, EPT/Vladivostok

Korkishko, Victor, Zoologist, Academy of Sciences, Kedrovaya Pad

Korkishko, Katia, Botanist, Academy of Sciences, Kedrovaya Pad

Kovalchuk, Stepan, Governor, Terney Raion

Krofta, Misha, Deputy Dir , Leskhoz, Leskhoz, Melnidchnoye, Primorski Krai

Krouglov, Victor (creating a zakaznik), Bichevaya Village, Lazo District, Khabarovski Krai

Kubanin, Andre, Far East Representative, Institute for Marine Biology, Vladivostok

Kuchenko, Konstantin M , First Dep Chairman of Committee, Min of Nat Resources, Vladivostok

Kulikov, Alexandr, Wildlife Foundation, Khabarovsk

Laptev, Alexandr, A , Deputy Director Lazovskii State nature Reserve (Zapovednik)

Lebedev, Anatoly, Primorskii Committee on Ecology, Director, Amur Research Society, Vladivostok

Melnikova, Ludmila, Construction engineer, Sikhote-Alin Zapovednik, Terney, Primorskii Krai

Mezentsev, Dmitry, Ecological Organization Tiger, Lazovskii, Primorskii Raion

Miquelle, Dale, EPT/Vladivostok

Nesmachniy, Yuri, Deputy Head of Local Authorities, Hasan District, Primorskii Krai, Slavianka

Newell, Josh, Friends of the Earth, Japan, Vladivostok

Nesmachniy, Yuri, Deputy Head of Local Authorities, Slavianka, Hasan Region Center

Nikulin, Alexander E , President, Safari Luxe, Khabarovsk

Obolenskaya, Lena, Interpreter, Far-Eastern Institute of Wildlife Management (Fishing, Hunting, Birding Expeditions), Khabarovsk

Orlov, Yuri, Far-Eastern Institute of Wildlife Management (Fishing, Hunting, Birding Expeditions), Khabarovsk

Shetin, Vladimir L , Ministry of Conservation, Regional Environmental Committee, Vladivostok

Shevlyakov, Alexander (Shasha), GIS Specialist, Sikhote-Alin Zapovednik, Terney, Primorskii Krai

Solkov, Vasili, Director, Zov Taiga, Vladivostok

Stepanek, Dean, COP, EPT/Vladivostok

Svmarlov, Fiodor, tourism developer, Public Organization of Natural and Historical Center, Vladivostok

Svirindenko, Oleg, Vice Mayor, Lazo District, Primorskii Krai

Terekhova, Tamara, A , Institute of Marine Biology, Far East Branch, Russian Academy of Sciences

Yudin, Vladimir T , President and General Director, Daltour-Yuco, Travel and Business Company

ANNEX C COMPARATIVE TOUR PACKAGES

The following list summarizes a representative selected tour packages offered on a regular basis to other countries

Country	Duration	No Particip	Attractions	Total Cost	Gateway City
Botswana	16	15 - 20	Wildlife, birds	\$4,150	
Nepal, India	16	6 - 15	Wildlife, trekking,	\$4,490	East Coast
Nepal India	18	8 - 15	Wildlife, tiger	\$3,490	Los Angeles/SF
Ethiopia	16	10 15	Highland trek wildlife	\$4 850	East Coast
Madagascar	13	10 15	Research	\$3,695	US via Paris
South Africa	14	10 - 15	Wildlife, game reserve	\$4 600	East Coast
South Africa	14	10 15	Photo safari Kruger Park	\$4 500	Wash/NY
Zimbabwe	14	12 Maximum	Wildlife, canoeing	\$4 450	East Coast
Costa Rica	12	10 - 15	Adventure rafting	\$2,600	Miami
Venezuela	14	10 - 15	Trekking & canoeing	\$2,845	Miami
Nepal	18	6 - 15	Trek, river rafting	\$3 490	Los Angeles/SF
Machu Picchu	11	15 - 25	Trek, rainforest	\$1,795	Miami
Mongolia	22	15 20	Wildlife, adventure	\$7 499	New York
Outer Mongolia	17	8 12	Cultural and wildlife	\$6,980	Anchorage
RFE, Bikin River	15	8 - 12	Rafting	\$3 460	Seattle
Morocco	15	6 - 15	High Atlas Mountains	\$2 990	New York/Boston
Tanzania	17	6 - 15	Wildlife	\$4,590	New York
RFE	16	10 - 16	Wildlife, tiger leopard	\$3,680	Anchorage
RFE	20	6	Wildlife tiger leopard	\$4 130	Anchorage
RFE	15	12	Wildlife birds (cranes)	\$3 000	Seattle
RFE	16	8 15	Wildlife tiger leopard	\$3 850	Seattle
Finland Urho	8	15	Wildlife Lapland	\$1 800	New York
AVERAGE	15			\$3 952	

**ANNEX D
PROTECTED AREAS IN THE RFE**

Protected Area	Category	Krai	Area (ha)	Jurisdiction	Year Es- tablished	Wildlife Emphasis
Bolshekhkhtsyrskii	Zapovednik	Khabarovskii	45 123	Federal	1963	Nature complex birds
Botchinskii	Zapovednik	Khabarovskii	267 000	Federal	1994	Nature complex birds
Bureinskii	Zapovednik	Khabarovskii	358,000	Federal	1987	Nature complex, birds
Dzhugdzhurskii	Zapovednik	Khabarovskii	807	Federal	1988	Nature complex, Birds
Morskoi - Dalnevostochniy	Zapovednik	Primorskii	65 000	Federal & Russian Academy of Sciences	1978	Sea, birds
Lazovskii	Zapovednik	Primorskii	120 000	Federal	1957	Tiger black bear & Goral
Sykhote-Alinskii	Zapovednik/ Biosphere	Primorskii	347 000	Federal	1935	Tiger, black bear & Goral
Kedrovaya Pad	Zapovednik	Primorskii	18,000	Federal & Russian Academy of Sciences	1917	Tiger, leopard & Ginseng
Khankaiskii	Zapovednik	Primorskii	38 000	Federal	1990	Cranes & other rare birds
Komsomolskii	Zapovednik	Khabarovskii	64 000	Federal	1963	Nature complex, birds
Ussuriyskii	Zapovednik	Primorskii	40,000	Federal	1932	Nature complex, birds

ANNEX E SAMPLE TOUR ITINERARIES

Lazovski Reserve, Primorski Krai

This tour has been structured with the same general characteristics as the tour described in the main text (Section 2) In this example the second site is the Lazovski Reserve in Primorski Krai (It is reiterated that any location within the RFE could be selected as sites—the study team developed itineraries only for the sites visited because of limited time)

Day 01 - Arrival Seattle, Washington

Arrival and transfer to local accommodations Evening briefing for all participants Dinner at leisure

Day 02 - Depart Seattle for Vladivostok, Russia

Day 03 - Arrive Vladivostok, Russia

After crossing the International Dateline flight arrives in Vladivostok in late afternoon Overnight in local hotel

Day 04 - Morning Flight to Plastoon, drive to Sikhote-Alin Biosphere Nature Reserve (Ternei, Russia)

For the next six days the group will be the guests of The Sikhote-Alin Biosphere Nature Reserve (Zapovednik), the primary research site of the Siberian Tiger Project During the stay the group will have the opportunity to meet with Russian and American researchers and field biologists The primary focus will be the Siberian tiger, its habitat, and the current efforts to save the tiger from extinction Though the chances of seeing a tiger (particularly in the dense summer forest) is slight, everyone, most certainly, will be able to follow in the tracks of this wondrous, solitary animal, known locally as, "The Master" Particular emphasis will be placed on relating the ecosystem to the tiger's survival The group will study the area's flora and fauna, current problems, and the issues relevant to the survival of Russia's unique System of Scientific Nature Reserves, zakazniki, natural monuments and national parks The Sikhote-Alin Biosphere Reserve will provide the group with a rare opportunity to explore the area, searching for signs of its rich wildlife including sika deer, elk, wild boar, goral (a rare mountain goat), seals, and a wide variety of exotic birds

Day 05 - At Sikhote-Alin Biosphere Nature Reserve

The group will drive to a prime tiger habitat Guided by a Siberian Tiger Project team member, the expedition will see tiger "marking trees" - a sign for the rest of the world that man is the intruder to the tiger's home

Day 06 - At Sikhote-Alin Biosphere Nature Reserve

The group will spend the day with an ungulate specialist in an area, considered prime hunting ground for the tiger

Day 07 - At Sikhote-Alin Biosphere Nature Reserve

The group will visit a Goral (rare type of mountain goat) zakaznik where photo opportunities abound

Day 08 - At Sikhote-Alin Biosphere Nature Reserve

The focus of the trip moves to the seal and to a seal's rookery where the expedition will be guided by an field researcher of the Zapovednik. Birds will be plentiful. An evening performance by the local Ternei chorus will fill the air with harmony and bright Russian musical sounds.

Day 09 - At Sikhote-Alin Biosphere Nature Reserve

The final full day at the Reserve will be spent in the forest, learning about the area's rare plants and, ultimately, relating the forest to the tiger.

Day 10 - Morning flight to Vladivostok. Motor transfer to Lazovskii

The next four days the group will continue in the tracks of the Siberian (Amur) tiger. Located between Vladivostok and the Sikhote-Alin Biosphere Nature Reserve, Lazo is an area teeming with rare birds, deer and wildlife. It, also, is the home of the Lazovskii Nature Reserve (Zapovednik) and a prime habitat area for the Siberian tiger. Accompanied by a Russian wildlife researcher who is one of Russia's finest tiger photographers and experts, the group will learn more about the tigers' habits and habitat at the Reserve and in other important habitat areas.

Weather permitting, the party will venture to a den which is periodically visited by tigers and where a female was documented giving birth. Again, the chances of spotting a tiger are slim, but there, undoubtedly, will be the opportunity to track this magnificent animal in a way few have ever been able. In addition, participants will learn about the local efforts to establish a Zakaznik—a private Siberian Tiger Reserve and about the grassroots efforts to increase habitat protection.

Day 11 and Day 13 - At Lazo

Day 14 - PM transfer to Vladivostok (General Sightseeing)

Vladivostok has been referred to as the San Francisco of the Russian Far East. During the stay everyone will have the opportunity to explore this port city, which until 1992 was closed to all foreigners. Expedition members may visit the local museums, city markets and harbor which is the important far east base for the Russian naval fleet.

Day 15 - In Vladivostok (General Sightseeing) Farewell dinner at a local restaurant

Day 16 - Flight to the United States

Khabarovsk Krai

This tour highlights the possibilities of travel in the Khabarovsk Krai. Again, it should be noted that all itineraries are samples only.

Day 01 - Arrival Seattle, Washington

Arrival and transfer to local accommodations. **Evening briefing for all participants**. Dinner at leisure.

Day 02 - Depart Seattle for Khabarovsk, Russia

Day 03 - Arrive Khabarovsk, Russia

After crossing the International Dateline we arrive in Vladivostok in late afternoon Overnight in local hotel

Day 04 - Drive to Zakaznik, Khor River Basin

The expedition arrives at base camp—a 43,000 hectare Zakaznik (Wildlife Preserve) which serves as a training center for a regional conservation group

Rich in many resources for local use The Khor River represents an important corridor and sanctuary for the Siberian tiger It is an area which has been the subject of a major protection program During the next few days participants will explore the area, visit a mineral spring, learn more about the region's inhabitants and abundant wildlife, and search for the ever elusive Siberian tiger Though the chances of seeing this magnificent animal are slim, one can be certain that he will see signs of this majestic animal The Khor River Basin is home to the Udege—a tribe whose livelihood depends almost entirely on the forest Their economy revolves around simple living—hunting, fishing, collection of forest products and agriculture But, above all, there is a reverence for “The Master”—the ever present, but solitary Siberian tiger In addition to its rather high Siberian tiger population the forests are the habitat for a myriad of medicinal plants, fruits, nuts, teas, mushrooms, and ferns The Khor River Basin is teeming with wildlife It is one of the last strongholds for the endangered Blackston owl

Day S 05 and 09 - At Zakaznik, Khor River Basin

Day 10 - Arrive at A Wildlife Rehabilitation Center (Khor River Basin)

In the morning participants will visit a Udege village The afternoon will be spent rafting down the river to a 5,000 ha Zakaznik, recently established as a Wildlife Rehabilitation Center For the next two days will be spent with “The Tiger Man”—Vladimir Kruglov who has captured over 40 tigers in the wild His singular efforts to establish a Wildlife Rehabilitation Center (Zakaznik) will afford the group a rare opportunity to learn about the tiger, its habitat and its ways from a seasoned veteran

DayS 11 and 12 - At Wildlife Rehabilitation Center (Khor River Basin)

Day 13 - Return to Khabarovsk

Day 14 (Sept 2, 1995) - In Khabarovsk

Trip to Big Khekzırskı Reserve where participants will have an opportunity to explore the nature complex and to lunch near the Amur River directly across the Chinese border

Day 15 - In Khabarovsk (General Sightseeing) Farewell dinner at a local restaurant

Day 16 - Depart for the United States