

Final Report to National Fish and Wildlife Foundation
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The tiger, *Panthera tigris*, is threatened with extinction in the wild. The combination of poaching, loss of prey, and habitat destruction has intensified the threats to their survival. WWF recently identified a series of 'tiger conservation units', or areas needed for the long-term survival of the tiger across their range. Several important tiger conservation units (TCUs) occur in the Annamite forests of Vietnam, and Lao, in the tri-national area of Cambodia, Lao, and Vietnam, and in the remaining forests of southern Vietnam near Cat Tien National Park. To assist the conservation efforts in this region, we identified the need to build capacity in conservation methodology and technology training, provide geographic information systems (GIS) software, and assorted GPS and GIS hardware. Using learned knowledge with the latest in GIS technology, it would be possible for local staff to continue to work to conserve the region's remaining tiger populations and the habitat and prey they need to survive.

To fulfill this directive and meet the requirements of the grant, WWF-US Conservation Science Program (CSP) undertook an introductory training of ArcView in April 1998. A staff member from the CSP spent a two-week period introducing and training staff of the WWF Indochina Programme in GIS. The majority of this time was spent teaching ArcView to staff members in small groups ranging from one to three individuals. There were several benefits to working in small groups. One was the ability to modify the lessons to work specifically related to that particular individual. The staff was also more likely to ask questions and not feel intimidated by the software. Seven staff members were introduced to the capabilities and applications of GIS specific to their fields. Multiple day intensive training was also provided to the GIS staff and the Vu Quang project manager. These staff members learned advanced GIS techniques and potential uses of ArcView in conservation planning.

An additional week was spent training local WWF conservation partners from the Institute of Tropical Biology in Ho Chi Minh City, Vietnam and the Thua Thien-Hue Provincial Forest Protection Department. Three staff ecologists at the Institute of Tropical Biology were introduced to basic GIS techniques, specific to their interests in wildlife ecology. An introduction to GIS was provided to the Thua Thien Hue Forest Protection Department. They also received a Brunton GPS unit, and were instructed in its care and use. An informal training session to ensure adequate knowledge and proficiency was provided to several forest protection department staff.

To support the GIS training, ArcView software was donated to the WWF Indochina program. Two copies of ArcView and the spatial analyst module were donated. To support several ongoing projects, two Brunton GPS units were also donated. One unit was given to the Thua Thien Hue Forest Protection Department and the other unit was left with the WWF Indochina program. A medium-sized digitizer tablet is being purchased through CalComp, a subsidiary of Summagraphics in Vietnam in early 1999. Satellite images, obtained through NASA, of the tri-

national area of Vietnam, Cambodia, and Lao was also obtained and made available to the WWF Indochina program. The tri-national area is a top priority TCU site, and contains some of the last remaining large blocks of intact habitat in southeast Asia. A series of large (36" x 48") maps of Asia-Pacific's ecoregions and additional maps of the Indochina region were prepared by the WWF-US CSP. A color printer was not provided as part of this grant, as previously indicated.

The costs for staff time travel expenses, hardware, and software appears in the following table. The NFWF form is attached and completed, but the table below provides a more detailed summary of services provided. The total expenses incurred were \$9,500. An invoice is attached requesting grant funds for the documented expenses.

<u>Budget Category</u>	<u>Actual Expenses (\$)</u>
• 2 Copies of ArcView and spatial analyst extensions	700
• 1 CalComp 24" x 36" digitizer tablet	500
• 2 Brunton XL 1000 Forest GPS units	1,100
• Large and small maps, LANDSAT satellite images	1,000
• Salary – Colby Loucks (15 days at \$250/day)	3,750
• Travel costs (airfares)	800
• Living expenses in Vietnam	900
• Field monitoring expenses (food, supplies)	750
	<u>Total 9,500</u>