

Temporary Notice: Currently there are both new-format and older-style malaria maps in publication within Travax materials. The framework for the new maps is described below. Additional maps are regularly being released in the new format, and the process will continue until all older-style maps have been replaced. In the interim, the older-style maps are being maintained in the event that content revisions are necessary.

Subscribers are notified of newly released maps in the weekly summary of updated Travax content. ***A complete list of the maps that have not been published in the new format is included at the end of this document.***

Travax malaria maps are color PDF files. Gray-scale printouts may lose clarity. Consult the color PDF version for clearest interpretation.

Map Shading

The shading scheme on Travax malaria maps is a clinical aid that portrays malaria protective recommendations geographically:

- **Dark shading:** The protective recommendation is chemoprophylaxis for **all** travelers (rare exceptions apply*).
- **Grid-filled shading:** The protective recommendation is chemoprophylaxis for **certain** travelers.
- **Gray stippled shading:** The protective recommendation is insect precautions only (rare exceptions apply*). These are areas where malaria transmission is reported to occur at negligible levels in local populations.
- **Non-shaded areas** represent areas where no protective measures are necessary (no evidence of malaria transmission exists).

Shading represents the protective recommendation and does not correlate directly to a defined quantitative probability of exposure. For example, a dark-shaded area in a sub-Saharan African country will have much higher transmission than a dark-shaded area in a South American country. The equal shading only means that the protective recommendation is the same in both locations: the degree of transmission has surpassed the minimal threshold for which chemoprophylaxis is recommended for all travelers.

Note on the term “risk” – The shading scheme described above portrays recommendations for traveler protection strategies. “Risk” is a subjective term that means different things to different providers and travelers, and its use may lead to inconsistencies in recommendations between providers. The shading scheme on the Travax maps avoids the use of risk terminology, and instead directly states a recommended approach for each destination.

Areas where insect precautions only are recommended

Gray stippled shading is used on the maps for areas where insect precautions are recommended but chemoprophylaxis is not, as malaria transmission is negligible in these areas. The use of stippling reinforces the recommendation that chemoprophylaxis is not needed for travel to such areas (rare exceptions apply*).

Areas where chemoprophylaxis is recommended for certain travelers

In the Travax malaria mapping scheme, these areas are locations where chemoprophylaxis is recommended for certain travelers based on factors including the characteristics of the itinerary, the characteristics of the traveler, and the degree of the traveler’s aversion to risk. Medical providers should make their recommendation for these areas in consultation with the traveler based on an assessment of the factors. Key components of these factors are

© Shoreland, Inc.

As with all Shoreland recommendations, Shoreland's malaria recommendations, which focus primarily on the risk to the individual traveler, reflect a synthesis and reconciliation of available advice from CDC, WHO, and other global authorities, as well as ongoing global surveillance and the published literature. These recommendations may differ from those of individual countries' public health authorities. Furthermore, Travax country-specific recommendations pertain to healthy adult travelers. Guidance regarding pediatric and special needs travelers can be found under the relevant topic in the Travax information library.

listed in the *Issues for Medical Providers to Consider* inset box. Due to space limitations, the factors listed on the map itself are abbreviated. They should be understood as follows.

Issues for Medical Providers to Consider

Factors favoring chemoprophylaxis

- *Adventure travel*: adventurous and other travelers without a set or planned itinerary, especially those with extensive outdoor exposure such as backpackers, campers, and hikers
- *Risk-averse travelers*: those who strongly prefer protective drugs even when risk may be below the usual threshold for chemoprophylaxis
- *Vulnerable travelers*: those with underlying medical conditions and/or the potential for an especially adverse outcome from malaria (pregnant women, children, immunocompromised individuals, or those with an underlying disease that could be intolerably exacerbated by malaria)
- *Immigrants visiting friends and relatives*: individuals and their families whose country of origin presents malaria risk, who have emigrated to a malaria-free country, and who are now returning to visit friends and relatives
- *Flexible itineraries*: travel that may include the possibility of an unanticipated visit to an area of high malaria transmission within the country
- *Travel longer than 1 month*: the probability of malaria exposure increases with longer travel times
- *Unreliable availability of medical expertise at the destination and/or lack of appropriate and reliable treatment drugs*: travel to developing countries or other locations where the health care infrastructure would make malarial illness more problematic

Factors against chemoprophylaxis

- *Air-conditioned hotels only*: Overnight accommodations are with certainty in reliably air-conditioned hotels only
- *Urban areas only*: Travel restricted to urban areas of large cities
- *Non-transmission season*: Travel assuredly during non-transmission season (where seasonality is stated in the "General information" statement in the malaria section)
- *Minimal nighttime exposure*: Minimal evening or nighttime exposure such as outdoor restaurants, unscreened windows, etc.
- *Travel shorter than 3 days*

City Symbols

In urban areas, malaria transmission may be equal to or less than the level in the surrounding region. The indicated protective measures will vary accordingly and different symbols are used in the Key.

- A black-filled circle only appears in regions where chemoprophylaxis is recommended for all or certain travelers. It denotes the same recommendation as the region surrounding it. A black-filled circle within a dark-shaded area means chemoprophylaxis is recommended for all travelers to that city (rare exceptions apply*). A black-filled circle within an area of grid-filled shading means chemoprophylaxis is recommended for some travelers, and the factors in the *Issues to Consider* inset box should be consulted.
- A gray-filled circle represents a city where insect precautions only are recommended (rare exceptions apply*).
- A white-filled circle with a black center-dot is used in the special situation where a city's immediate outskirts present higher malaria transmission and exposure than the central urban areas of that city. The immediate outskirts may be poor, peri-urban sectors that sprawl into rural topography, or they may be transitional zones when the city is adjacent to jungle or forested terrain. This symbol indicates insect precautions only are recommended in central urban areas, but at the city outskirts the protective recommendation should be considered the same as the surrounding region. As malaria is typically transmitted from dusk to dawn, the location of sleeping accommodations should also be considered.

- A white-filled circle represents a city where no protective measures are necessary (no evidence of transmission exists).
- A star represents the national capital. White, black, gray, or white-with-center-dot corresponds to city levels above.

Towns and villages are considered rural in character, not urban. They are not displayed on Travax malaria maps, except in the case of small countries that have few or no actual cities. In those cases, city circles may be used to represent towns, and the same indications noted above apply for protective measures in those towns.

Airplane Symbols

Airplane symbols are included only for high-traffic airports that are situated in proximity to areas of malaria transmission and whose location may not be known by some travelers (for example, Kruger Mpumalanga International Airport near Nelspruit, South Africa, and Inch'on International Airport near Seoul, South Korea).

* “Rare exceptions apply” – There may be rare exceptions to the recommendations of “Chemoprophylaxis for all travelers” and “Insect precautions only.”

An example of a rare exception to the “Chemoprophylaxis for all travelers” recommendation would be an executive flying into such an area for only a few hours with no evening exposure. Chemoprophylaxis would not be recommended in this case.

An example of a rare exception to the “Insect precautions only” recommendation would be vulnerable travelers: an existing medical vulnerability for whom even a remote possibility of malaria exposure is unacceptable. Chemoprophylaxis would be recommended in this case.

Note: The locations and/or boundaries of many of the national parks, reserves, and points of interest represented in Shoreland’s maps have been extracted, with permission, from the World Database on Protected Areas (WDPA) Annual Release 2009 (web download version), February 2009. The WDPA is a joint product of UNEP and IUCN, prepared by UNEP-WCMC, supported by IUCN WCPA and working with Governments, the Secretaries of MEAs and collaborating NGOs. For further information: protectedareas@unep-wcmc.org.

List of Maps Published in the Black-and-White Format

Burma	Gabon	Niger	Timor-Leste
Burundi	Georgia	Rwanda	Togo
Cape Verde	Guinea	Sao Tome and	Uganda
Central African	Guinea-Bissau	Principe	Vanuatu
Republic	Liberia	Sierra Leone	
Comoros	Mauritania	Solomon Islands	
Equatorial Guinea	Mayotte	Somalia	

General information: predominantly *P. falciparum*. Transmission occurs throughout the year.

Protective recommendations:

Chemoprophylaxis is recommended for all travelers: throughout the division of Sylhet; certain districts (see map) in the divisions of Rangpur, Dhaka, and Chittagong; all cities and towns within these areas.

Chemoprophylaxis is recommended for certain travelers (see Issues to Consider inset): certain districts (see map) in the divisions of Rangpur, Dhaka, Chittagong, and Khulna; all cities and towns within these areas.

Insect precautions only are recommended (negligible transmission is reported): all other areas not mentioned above except the city of Dhaka.

No protective measures are necessary (no evidence of transmission exists): the city of Dhaka.

Protective measures: Evening and nighttime insect precautions are essential in areas with any level of transmission. Atovaquone/proguanil (Malarone), doxycycline, and mefloquine are protective in this country.

Issues for Medical Providers to Consider

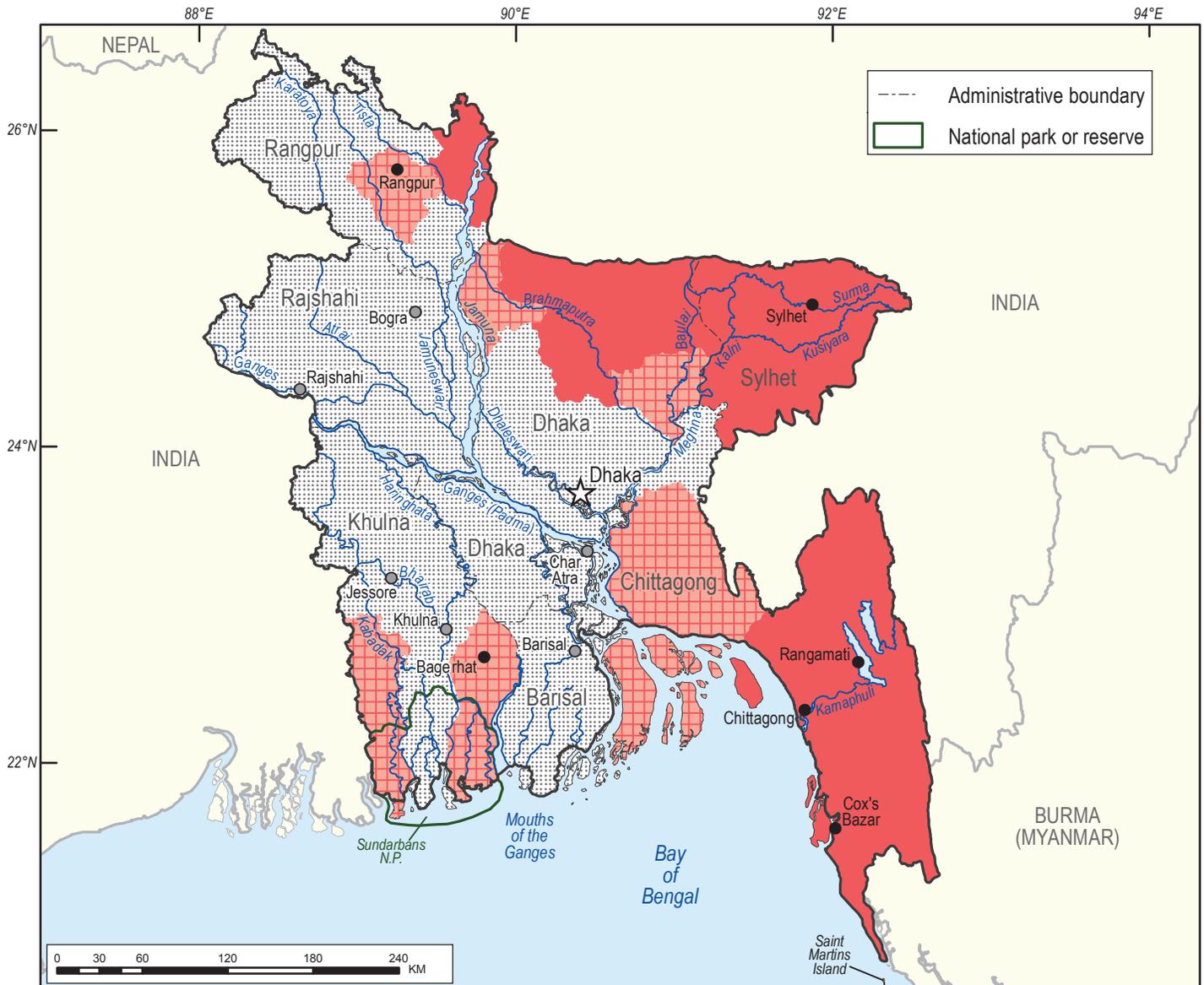
Factors favoring chemoprophylaxis

- Adventure travel
- Risk-averse travelers
- Vulnerable travelers
- Immigrants visiting friends and relatives
- Flexible itineraries
- Travel longer than 1 month
- Unreliable medical expertise and/or treatment drugs at destination

Factors against chemoprophylaxis

- Air-conditioned hotels only
- Urban areas only
- Non-transmission season
- Minimal nighttime exposure
- Travel shorter than 3 days

See the “**Technical Explanation of Malaria Mapping**” document for more information.



KEY for Malaria Protective Recommendations — Evening and nighttime insect precautions are essential in areas with any level of transmission.

- Chemoprophylaxis is recommended for all travelers*
- Chemoprophylaxis is recommended for certain travelers; see *Issues to Consider* inset above
- Insect precautions only are recommended* (negligible transmission reported)
- City where protective recommendations are the same as the surrounding region
- City where insect precautions only are recommended* (negligible transmission reported)
- National capital (no protective measures are necessary)

* RARE EXCEPTIONS APPLY. SEE THE TECHNICAL EXPLANATION OF MALARIA MAPPING DOCUMENT FOR MORE INFORMATION.

General information: approximately equal between *P. falciparum* and *P. vivax*. Transmission occurs throughout the year, and is highest from May through October.

Protective recommendations:

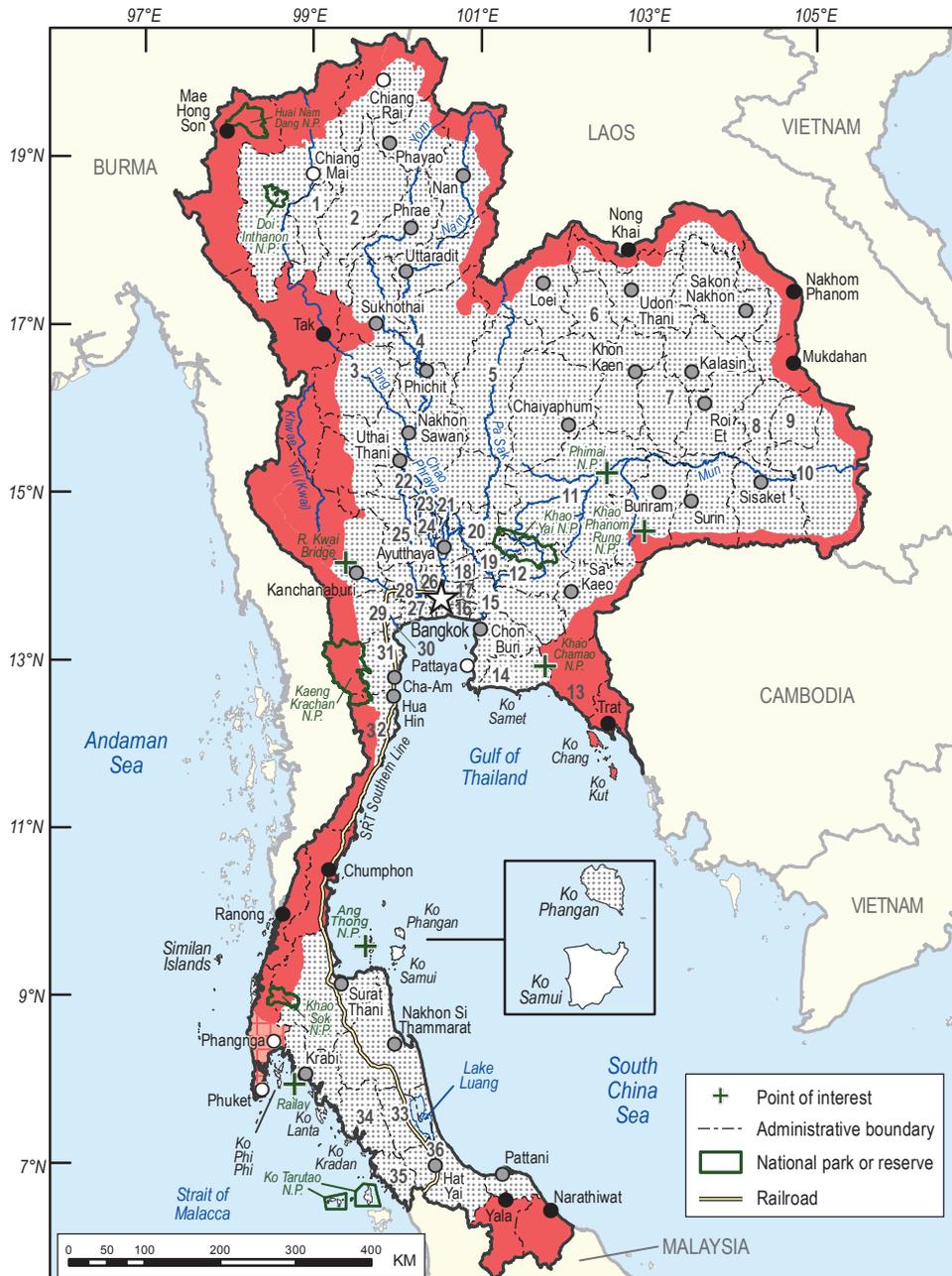
Chemoprophylaxis is recommended for all travelers: throughout the provinces of Mae Hong Son, Tak, Chanthaburi [13], Trat, Chumphon, Ranong, Yala, and Narathiwat; forested areas in the provinces of Surat Thani and Phangnga (see map); the islands of Ko Chang and Ko Kut; forested areas along the borders with Burma, Laos, and Cambodia; all cities and towns within these areas.

Chemoprophylaxis is recommended for certain travelers (see Issues to Consider inset): rural areas of Phuket and southern Phangnga provinces, excluding usual tourist resorts.

Insect precautions only are recommended (negligible transmission is reported): the islands of Ko Phangan, Ko Phi Phi, Ko Lanta, and all other islands not mentioned above or below; all other mainland areas not mentioned above, including all cities and towns in these areas except Bangkok, Pattaya, Chiang Mai, Chiang Rai, Phuket, and Phangnga.

No protective measures are necessary (no evidence of transmission exists): the islands of Ko Samui and Ko Samet; the cities of Bangkok, Pattaya, Chiang Mai, Chiang Rai, Phuket, and Phangnga.

Protective measures: Evening and nighttime insect precautions are essential in areas with any level of transmission. Atovaquone/proguanil (Malarone) and doxycycline are protective in this country.



Issues for Medical Providers to Consider

Factors favoring chemoprophylaxis

- Adventure travel
- Risk-averse travelers
- Vulnerable travelers
- Immigrants visiting friends and relatives
- Flexible itineraries
- Travel longer than 1 month
- Unreliable medical expertise and/or treatment drugs at destination

Factors against chemoprophylaxis

- Air-conditioned hotels only
- Urban areas only
- Non-transmission season
- Minimal nighttime exposure
- Travel shorter than 3 days

See the "Technical Explanation of Malaria Mapping" document for more information.

NUMBERED PROVINCES

Except for Pattaya, all city symbols represent province capitals (which share the same name as their respective provinces). Numerals are placed in the approximate locations of the capitals.

1 - Lamphun	19 - Nakhon Nayok
2 - Lampang	20 - Saraburi
3 - Kamphaeng Phet	21 - Lop Buri
4 - Phitsanulok	22 - Chai Nat
5 - Petchabun	23 - Sing Buri
6 - Nong Bua Lamphu	24 - Ang Thong
7 - Maha Sarakham	25 - Suphan Buri
8 - Yasothon	26 - Nonthaburi
9 - Annat Charoen	27 - Samut Sakhon
10 - Ubon Ratchathoni	28 - Nakhon Pathom
11 - Nakhon Ratchasima	29 - Ratchaburi
12 - Prachin Buri	30 - Samut Songkhram
13 - Chanthaburi	31 - Petchaburi
14 - Rayong	32 - Prachuap Khiri Khan
15 - Chachoengsao	33 - Phattalung
16 - Samut Prakan	34 - Trang
17 - Krung Thep	35 - Satun
18 - Pathum Thani	36 - Songkhla

KEY for Malaria Protective Recommendations — Evening and nighttime insect precautions are essential in areas with any level of transmission.

Chemoprophylaxis is recommended for all travelers*	City where protective recommendations are the same as the surrounding region
Chemoprophylaxis is recommended for certain travelers; see Issues to Consider inset above	City where insect precautions only are recommended* (negligible transmission reported)
Insect precautions only are recommended* (negligible transmission reported)	City where no protective measures are necessary (no evidence of malaria transmission exists)
	National capital (no protective measures are necessary)

* RARE EXCEPTIONS APPLY. SEE THE TECHNICAL EXPLANATION OF MALARIA MAPPING DOCUMENT FOR MORE INFORMATION.